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THIS WEEK'S NEWS

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LONDON COUNTY COUNCIL has voted £7,160,000 for the development of two of three sites acquired at Borehamwood, Herts. The erection of 4,180 dwellings is included in the project. 460

THAT SIMPLICITY was the key to good village design was the main point emphasised by Dr. Thomas Sharp in a recent talk at the Town Planning Institute. 463

CHANGES have been announced in the Regional Organisation of the Ministry of Works to meet the changed circumstances arising from the administration of the National Health Service Act and the National Assistance Act. 464

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SOME OF THE ADVANTAGES and uses of light-weight concretes have been described by Mr. Anthony Pott, A.R.I.B.A., in a paper on "Recent Developments in Permanent Building Construction." 468

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FALLACIES AND THE NEW ARCHITECTURE

ONE of the attractions of science for the rational mind is that it does attempt, on the basis of evidence, to reach generally acceptable conclusions on a given subject. In the sphere of mathematics, for example, it has long been agreed that 2 and 2 make 4, though for all we know the theory of Relativity may have shown this belief to be entirely irrational. Nevertheless, it can be safely accepted as a useful fiction. The trouble with art is that it seems impossible to reach any universally acceptable conclusions about it. That very uncertainty is, perhaps, its chief interest and attraction.

No art is more subject to controversy among its practitioners than architecture. Hardly a week goes by without a crush of architects getting together to talk about the theory and practice of their art. Structure, particularly some new development like prestressed concrete, may occasionally beguile them, but it is not long before they are back to "form and function"—their real loves. To listen to, or read a good report of, a well-thought-out paper on the problems of contemporary architecture and the discussion upon it is, to the enthusiast for these things, one of life's most stimulating experiences, particularly when the speakers happen to be young men fired with reforming zeal and eager to express in architecture the spirit of their age. The approach may be from a variety of angles—the historical, the sociological, the formal, the functional, or the technological. Everyone seems to know what is wrong with architecture and how to right it; ideas are thrown out in profusion and promptly scattered like ninepins. Much of the talk at these meetings is, it must be confessed, often wild, woolly and confusing—a sort of intellectual letting-off of steam; and the seeker after wisdom must often come out, like old Omar, by the same door wherein he went.

The experience of encountering a lecture that leaves one with the impression of a sound, agreeable and well-stated philosophy of architecture is not so frequent that it can be allowed to pass without some comment. We make no apology, therefore, for returning to the thoughtful and entertaining paper that Mr. Howard Robertson gave recently before the Architectural Association of Ireland (reported in *The Builder* for March 25). Mr. Robertson hit upon the novel idea of setting forth his architectural philosophy by exploding a number of fallacies which he called "The Seven Vamps of Architecture." Here they are in brief:

(1) That to write about architecture is practically an acknowledgment of incapacity to create it.

(2) That those who can, do; those who can't, teach.

(3) That the Beaux-Arts training is, in itself, a bad thing, to be reviled, revolted against and generally discredited as a "reactionary element."

(4) That there is something secretly degrading, even anti-social, in the term "monumental" or the "grand manner."

(5) That whatever is truly functional is bound to be beautiful; that certain architectural forms are taboo because they are not directly related to the main system of construction, and likewise certain features because they have been used before.

(6) That there should of necessity be a direct and true relationship between exterior and interior.

(7) That the setting up of State and municipal offices for executing public or architectural works is for the ultimate benefit of architecture.

Mr. Robertson did not claim that these were the only fallacies that needed exploding; indeed, it is easy to think of others; but those which he selected are certainly most popular ones, and impartial readers of his paper will agree that he blew them sky-high with the friendliest manner in the world. To do justice to the paper by way of comment would be to write another of equal length. All we propose to do, therefore, is to call further attention to the paper by referring to a few points that seem to be of particular value at a time like the present, when there is a widespread urge towards contemporary expression. The first point which seems to be conclusively established is that it is a great mistake to imagine that the architect can be created *in vacuo*, without a thorough grounding in the principles of design as they have been understood in the past. Mr. Robertson was able to show that even the chief revolutionaries have been influenced in some measure by Beaux-Arts teaching. The second is that it is not necessarily virtuous, in the striving after simplicity, to discard every form and detail that has a traditional association. As Mr. Robertson said, simplicity, either in art, or building, or people, is only a virtue by contrast. "It can be a purification; on the other hand, it can become a negative aridity and a dreadful bore as well." One of our philosophers (whose name eludes us at the moment) made a somewhat similar point when he observed that simplicity is best achieved by the potentially complicated. A third point is that "functional veracity" is not necessarily consistent with good effect. As Mr. Robertson remarked, the fetish of direct expression leads us to the acceptance of disagreeable and uncouth architectural elevations. The converse can, of course, be overdone, and it is sometimes disconcerting to find that that nice range of windows balancing those of the drawing-room light only the cloakroom and lavatory. However, that sort of thing might often be avoided by more careful planning. A further point emphasised by Mr. Robertson was the danger to young architects of becoming involved in cliques. "These 'schools,'" he said, "are frequently at war with one another, and the young architect is attracted to one leader or to another according to whether his reputation and his outlook seem to provide a key to unlock the door to the creation of a contemporary architecture." A satisfying contemporary style will never be evolved by the pursuit of individual eccentricity. Lethaby pointed this out nearly half a century ago when he wrote: "No art that is only one man deep is worth much; it should be a thousand men deep."

Mr. Robertson has shown by word and deed that he is neither a reactionary nor an ultra-modernist. He seeks—rightly, as we believe—the middle path of progress, and, like all reasonable human beings, is prepared to compromise when that seems to be the right thing to do. In his paper he makes his points skilfully and with a nice sense of humour. If it were not to distract this year's Royal Gold Medallist from his work as an architect we should urge him to do more writing. Those who may have missed this address should make a point of reading it, for in our view it is much more than the conventional "paper read"; it has permanent qualities of interest and value, inasmuch as it addresses itself shrewdly to the architectural problems of our time.

NOTES AND NEWS

The A.A. Reception.

OVER 1,100 members and guests attended the annual reception held at the Architectural Association on April 7. The President and Mrs. Enthoven received the guests in the Labrary, and the programme of entertainment which followed had all the variety which has made these occasions so successful in the past.

A popular resort was the top floor studio, where John and Doris Bickerdike, Christine Fletcher and Mary Saunders gave an exhibition of puppets, the model theatre designs being the work of Rhoda Dawson and Raymond Royce. Those preferring less hilarious entertainment visited the Exhibition Room, where some excellent drawings by Gordon Cullen were on view, and the Members' Room, where C. Lovett Gill had arranged an interesting display of the craft stages in the making of violins and violas.

Perhaps it was to be expected that those taking part in the architectural quiz should afterwards seek less harassing amusement in the basement lecture hall and the ground-floor studio. On the walls of the latter was an admirable display of posters by A.A. students, but few could have appreciated this, there being greater interest in the refreshments provided by Mesdames Gertie, Louie and Becky, whose efforts added considerably to the conviviality of a thoroughly enjoyable evening.

Festival of Britain Architects.

THE preliminary plan for the South Bank Exhibition has now been prepared by the Presentation Panel, and a number of architects have been appointed for the design of specific structures. The appointments have been made with the approval of the Council for Architecture, Town Planning and Building Research, which was set up by the Lord President of the Council in May last year, and include Gordon Tait, F.R.I.B.A. (of Sir John Burnet, Tait and Partners); Brian O'Rorke, M.A., A.R.A., F.R.I.B.A.; Architects' Co-operative Partnership; G. Grenfell Baines, A.R.I.B.A., A.M.T.P.I.; Basil Spence, O.B.E., F.R.I.B.A.; H. T. Cadbury Brown, A.R.I.B.A.; Messrs. Arcon; Eric Brown, L.R.I.B.A., M.S.I.A.; Maxwell Fry and Jane Drew, FF.R.I.B.A.; Denis Clarke Hall, F.R.I.B.A.; Bronek Katz, Dip. Ing. Arch., and R. Vaughan, A.A.Dip., A.R.I.B.A.; Robert Goodden, R.D.I., A.R.I.B.A., F.S.I.A., and R. D. Russell, R.D.I., F.S.I.A, and Wells Coates, O.B.E., R.D.I., F.R.I.B.A., Ph.D.

These architects will act under the general direction of the Presentation Panel, which has overall responsibility for the co-ordination of design for the Festival Exhibitions. Mr. Gerald Barry, Hon. A.R.I.B.A., the Director-General, is also Chairman of the Presentation Panel. The co-ordinating architects are Misha Black, O.B.E., F.S.I.A., M.Inst.R.A., Hugh Casson, M.A., A.R.I.B.A., M.S.I.A., and Ralph Tubbs, A.R.I.B.A.; and the co-ordinating display designers are James Gardner, O.B.E., R.D.I., F.S.I.A., and James Holland, F.S.I.A.

Appointment of Landscape Architect.

THE appointment is also announced of Mr. H. F. Clark, A.I.L.A., as consultant landscape architect to the Festival of Britain, 1951.

Further appointments of architects and display designers for this and other projects for the Festival of Britain, 1951, will be announced at a later date.

The members of the Council for Architecture, Town Planning and Building Research, which was set up to ensure that architecture, town planning and building research are worthily treated in all projects for which the Festival organisation will be responsible, are H. V. Lobb, F.R.I.B.A., F.R.S.A., A.I.Struct.E., Prof. H. V. A. Briscoe, A.R.C.S., D.Sc., F. J. Forty, B.Sc., M.Inst.C.E., M.Inst.Mun.E., F.R.San.I., Robert H. Matthew, A.R.I.B.A., Rowland Nicholas, C.B.E., D.Sc., M.Inst.C.E., M.T.P.I., Sir George Pepler, C.B., P-P.T.P.I., F.S.I., Hon.A.R.I.B.A., J. M. Richards, A.R.I.B.A., Howard Robertson, M.C., F.R.I.B.A., S.A.D.G., and Hugh Casson, M.A., A.R.I.B.A., M.S.I.A.

Bronze Medal Award.

THE Jury appointed by the Essex, Cambridge and Hertfordshire Society of Architects have made a bronze medal award to the late Professor Otto R. Salvisberg and Mr. C. Stanley Brown, in recognition of their building, the Roche Products building, Welwyn Garden City (illustrated in *The Builder*, October 6, 1939). The selection was made from buildings completed during the eleven years ended December 31, 1948.

It is expected that the medal will be presented to Mr. C. Stanley Brown at Welwyn Garden City on May 7.

M. of E. Architects' Branch.

THE Ministry of Education announced on April 8, the appointment of the following to form the nucleus of a Development Group within the Architects' Branch of the Ministry:—A. Pott, A.R.I.B.A., A.A.Dipl., D. L. Medd, A.R.I.B.A., A.A.Dipl., Mary Crowley, A.R.I.B.A., A.A.Dipl., and J. P. Price, A.R.I.B.A., A.A.Dipl.

The duties of the Group were given in Circular 191, issued on December 16 last year, which also drew special attention to the new building procedure to be followed by local education authorities. The essential feature of the change is that building schemes will be fully informally discussed in their earliest stages instead of the old method, when the various branches of the Ministry considered schemes formally after they had reached a fairly advanced stage.

Architect for Glenrothes New Town.

THE Glenrothes New Town Corporation have appointed as architect Mr. Edward A. Ferriby, B. Arch., A.R.I.B.A.

Mr. R. E. Enthoven, President of the Architectural Association (right), greeting Mr. Michael Waterhouse, President of the R.I.B.A., at the A.A. reception on April 7.

Some of the 1,100 members and guests who attended the A.A. reception held at 36, Bedford-square, W.C.1. The proceedings are referred to on facing page.

who has been in charge of the building operations of the Northern Ireland Housing Trust since 1945. He was previously Deputy Borough Surveyor at Southampton, and before that he was principal assistant to the City Architect of Liverpool. Mr. Ferriby takes up his new post on April 4.

Sir Hector M'Neill, Lord Provost of Glasgow, chairman of the Glenrothes Corporation, has announced that the first instalment of development of the new town has been planned to take place at the village of Woodside, which lies about halfway between Kirkcaldy and Markinch. It is proposed to erect on this site 300 houses and a primary school.

A Conference for Students.

AN International Architectural Student Conference is to be held at the Royal Institute of British Architects from April 21 to April 27. A preliminary programme has been prepared and over 70 delegates are expected to attend. The Conference is being organised on behalf of the International Union of Students by the British Architectural Students' Association.

"Short List at Birkenhead."

MR. J. V. QUARMBY, F.R.I.B.A., whose name appeared in the short list for the post of Borough Architect of Birkenhead, published in our last issue, is the Deputy City Architect of Portsmouth.

Professional Announcements.

MESSRS. DAVIS, BELFIELD AND EVEREST, chartered quantity surveyors, 9, Ashley-place, S.W.1, have taken into partnership Mr. E. R. Parrinder, A.R.I.C.S., who has been a senior member of the firm for some years. The style of the firm remains unchanged.

MR. S. A. LAMBERT, A.I.A.A., registered architect, has commenced practice at 7, Conway-road, Maidstone, Kent, and will be pleased to receive trade catalogues, price lists, etc.

MR. JOSEPH W. ANDERSON, F.I.A.A. and S., M.Inst.R.A., announces that he has formed a partnership and that the style of the firm will be Messrs. Anderson and Pilkington, 35, Clifton-street, Blackpool.

MR. ANTHONY J. ROBINSON, quantity surveyor, is now in private practice at 33, North-row, Park-lane, W.1, and at Milnthorpe-court, Meads, Eastbourne, at which addresses he will be pleased to receive trade catalogues, etc. (Tel.: Mayfair 0402-3 and Eastbourne 2746).

COMPETITION NEWS

Development Project for Spanish Housing

THE Instituto Técnico de la Construcción (Technical Institute of Construction), Ruiz de Alarcón, 25, Madrid, has announced details of an international competition open to any persons interested in constructional work for the best project of industrial development necessary to manufacture machinery, accessories and materials to build dwellings to house 50,000 Spanish families each year. The object of the competition is to submit a project for this building of dwellings for 50,000 Spanish families, including the manufacture of the necessary materials, their erection and a general indication of the development of the necessary auxiliary industries.

Competitors may submit any system of construction and type of building which, due to its technical or economic advantages, or its suitability, they deem to be most advantageous for the purpose.

The projects will have to satisfy the following conditions—(a) The houses are to be designed so that they may be suitable for emplacement in the neighbourhood of Spanish urban districts, their exact location to be specified later. The houses to be built anywhere in Spanish territory, but always in groups of over 500; (b) the housing colonies will be connected by road to the nearest railway station, which in no case will be more than 20 kms. away; (c) so that the varying cost of the ground shall not interfere with the project, allowance must be made for a varying density of distribution of the dwellings; (d) the type of dwelling must be so designed that without alteration it is suitable for use in the various climatic regions of Spain; (e) problems arising out of varying mechanical properties of the ground, or its humidity, need not be considered in the project: these will be solved separately in each case later on; (f) the form, arrangement, and dimensions of the dwellings are left to the choice of the competitor. The only limiting condition is that the dwellings shall satisfy the need of the average Spanish family.

Together with the housing project, a scheme must be submitted describing the methods of work and organisation, as well as suggestions to establish new auxiliary industries, and the adaptation of those already in existence, to meet the new technical requirements.

The building of the new dwellings must be planned assuming that only materials of Spanish manufacture will be used, both as regards materials which are already available and those which may be eventually manufactured by new industries, such as are mentioned above.

The machinery necessary to the project should also be of Spanish manufacture, but if it is considered absolutely essential, Spanish machinery can be supplemented by some imports, although these should be kept to a minimum, and in no circumstances must their cost exceed 5 per cent. of the total cost.

Each competitor can submit as many schemes as he likes.

Competitors requiring initial data on which to base their project can apply to the Institute at Ruiz de Alarcón, 25, Madrid (Spain), before July 1, 1949, and wherever possible this will be supplied to them, free of charge.

Projects must be sent in to the above address before November 15, 1949, in a sealed envelope stating clearly that they are for "Concurso Internacional 1949."

Works sent in will be studied by a tribunal consisting of persons of recognised authority in the technical and industrial spheres of Spain, and their names will be made known at the same time as the result of the competition. Before March 31, 1950, the tribunal will award a single, indivisible price of 100,000 pesetas (approximately £1,000) to the work which it considers to have the greatest merit. Additional prizes may be awarded.

COMING EVENTS

Thursday, April 21.

THE ROYAL INSTITUTION OF CHARTERED SURVEYORS (Junior Organisation).—Two debates, under the chairmanship of Mr. John Watson, F.R.I.C.S. R.I.C.S., 12, Great George-st., S.W.1. 6 p.m.

SOCIETY OF CHEMICAL INDUSTRY (Road and Building Materials Group).—"Concrete Road Jointing Materials," by Mr. R. S. Millard. Joint meeting with Institution of Highway Engineers. Gas Industry House, 1, Grosvenor-pl., S.W.1. 6 p.m.

Friday, April 22.

BIRMINGHAM AND FIVE COUNTIES ARCHITECTURAL ASSOCIATION. — "Flooring, with special reference to Asphalt, Pitch Mastic, Acid-resisting and Composition floors," by Mr. B. W. Hadfield, A.M.I.C.E. James Watt Institute, Birmingham. 6 p.m.

FROM "THE BUILDER" OF 1849

Saturday, April 14, 1849.

WINDOW DUTIES.—The amount of window duty assessed during the year 1847-48 was 1,880,325*l.*; the amount received, 1,811,742*l.*; the number of houses charged, 485,143; and the number of surcharges made, 2,166.

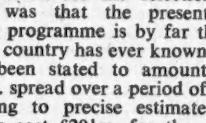
POST-WAR SCHOOLS

NEW MATERIALS AND METHODS OF CONSTRUCTION

Mr. Loweth's Lecture to the Chadwick Trust

THE Chadwick Trust "Bossom Gift" lecture was delivered on April 5 at the Royal Sanitary Institute by MR. SIDNEY H. LOWETH, F.S.A., F.R.I.B.A., Kent County Architect, who took as his subject "The Employment of New Materials and Methods of Construction in the Post-War Schools." Mr. F. R. Hiorns, F.S.A., F.R.I.B.A., was in the chair. Following is a summary of Mr. Loweth's remarks:—

The reason for the selection of this subject was that the present schools building programme is by far the largest that this country has ever known. In fact, it has been stated to amount to over £1,000m. spread over a period of 15 years. According to precise estimates, school buildings cost £20¼m. for the year 1947 and £32m. for 1948, and an indication of the importance they assume may be gathered from the fact that the Kent County Architect's Department new building programme is made up of about 75 per cent. education and 25 per cent. buildings for police, fire brigade, ambulance and other services. I am led to believe that these percentages are typical of many other similar-sized counties.



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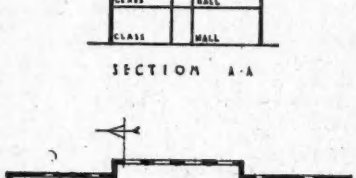
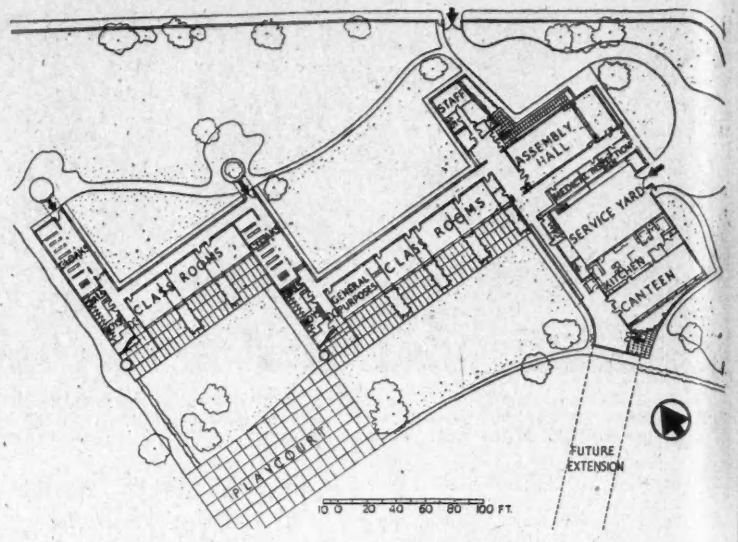


PLAN

Typical London School Board plan.



Plan of Orpington Crofton School. Lyons and Israel, AA.R.I.B.A., architects. S. H. Loweth, F.S.A., F.R.I.B.A., Kent County Architect.

Opportunities for Architects.

The advent of the Education Act of 1944 has afforded exceptional opportunities to schools architects throughout the length and breadth of the land; these opportunities have in most cases been fully grasped, and in consequence the designs of English schools are now tremendously improved as compared with those of the pre-war period. Our designs have, in fact, been described by visiting foreign experts and also by the Minister of Education recently as "without doubt leading the world."

Fundamentals of the New Plans.

The complete break-away from the old type multi-storey and quadrangular plans to the free and open modern bungalow plan has given us, for the time being at any rate, comparatively static types of plans, but the methods of construction and materials used therein are constantly changing. In the new plans we are aiming at:—

(1) MAXIMUM FLEXIBILITY, by the employment of non-load bearing partitions (which can easily be removed to suit changed conditions). The larger areas of sites permit of future extensions.

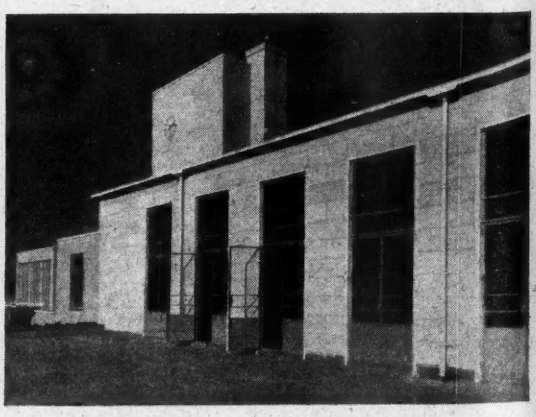
(2) RAPIDITY OF ERECTION, by using mostly single-storey construction, and by employing as many dry processes as possible, lightweight materials and prefabrication.

It must, however, be noticed in passing that the employment of light structures and large window areas together with the advent of wireless as a method of teaching may give rise to considerable problems of transmission of sound.

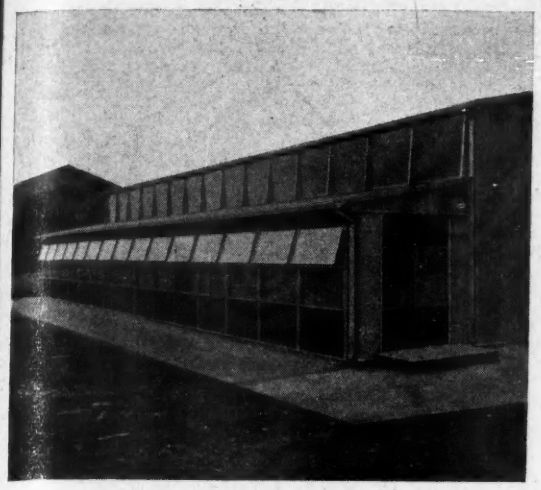
(3) EMPLOYMENT OF MATERIALS THAT ARE READILY AVAILABLE (i.e., minimum use of timber and steel).

Any architect or builder present will know that, during the course of any post-war year, hundreds of letters and circulars have been received advocating the uses of new materials and methods of construction. In consequence the buildings are changing from day to day, and one of the objects of this lecture is to provide a

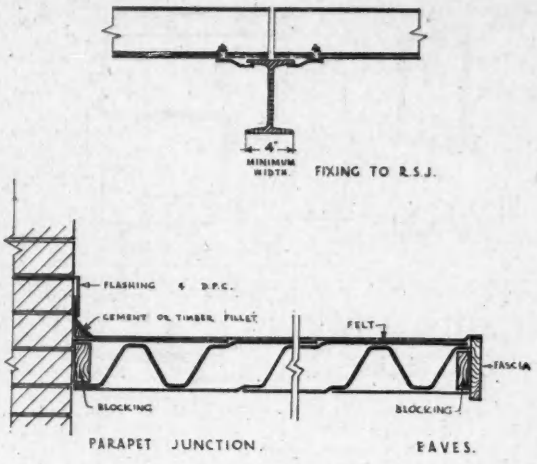
An example of "Holoform" pressed metal construction.



An example of "Orlit" construction.



The corridor elevation (two-classroom unit) of the Aluminium school.



"Turnall" asbestos-cement decking.

very brief review of some of these changes. It is, of course, the duty of the architect to keep abreast of the times, but he must at the same time exercise considerable caution when contemplating many of these drastic changes, otherwise he may cause his client (whether he be a private person or an authority) heavy maintenance costs.

The late Professor Lethaby, of whom I am a very humble disciple, said that "We must build with the spirit of adventure." He also said of architecture: "It is a developing structural art, satisfying the special requirements of the time by adaptation and experiment. It is first of all good, sound and competent building whatever else may be added to this essential basis."

To any educationists that may be here to-day I would say that architectural education should be directed to developing the constructive sense, building power and the spirit of invention. It should be scientific, technical and practical. We should aim at closer co-operation with builders, and all young men as part of their training should spend some time in builders' works and on buildings in progress.

By "constructive" more is implied than is usually meant by construction. It means truly "constructive construction," the proper selection and use of materials and liberty of workmanship to find a way; it means an attempt to find frank, reasonable and inventive solutions of modern problems in a search for organic and perfect building form and methods.

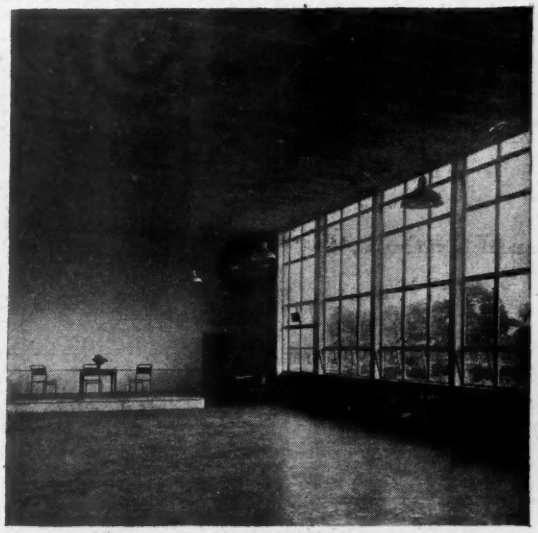
To revert to my main subject, the Report of the Technical Working Party on School Construction, recently published, was welcomed by schools architects. In general, it may be described as a development of the ideas put forward in the 1945 Post-War Building Studies No. 2 (i.e., Standard Construction of Schools), but the experience gained as the result of the completion of a number of post-war schools and the clearer appreciation of the problems of present-day building have led to modifications of the earlier proposals in detail.

The fundamental assumption that school buildings can be provided immediately in satisfactory numbers only by a marked expansion of the spheres of standardisation and prefabrication remains unquestioned. The standardisation and prefabrication of "complete schools" is not advocated, or even of classroom or cloakroom units, but only of a structural frame, windows, decking and walling components. All should be standardised and factory-made, and largely produced under bulk-purchase orders. Other high priority building programmes, such as housing, export producing factories and government rearmament works, competing for labour and normal building materials, may in any case force such a development on the schools building programme.

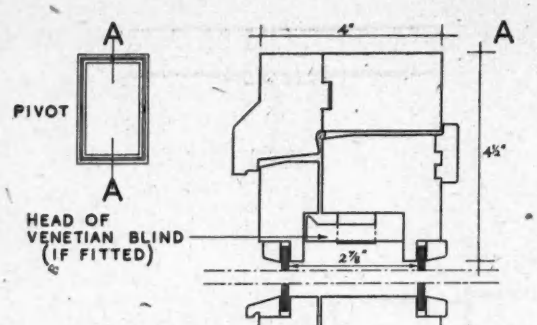
Some Disadvantages of Prefabrication.

Recent experience of prefabrication has given to many architects a surprisingly long list of its disadvantages. For instance, it cannot function at short notice, as it cannot be organised without an

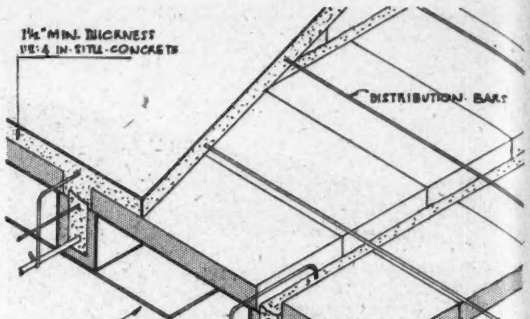
The "Marquetone" wood chip "terrazzo" floor.



Assembly hall, showing "Thermacoust" ceiling insulation.



"Carda" window sections.



"Myko" foamed-slag roof construction.

assured demand over a long period. If large or heavy units are required, transport, hoisting and storage become difficult. Again, unless care is taken to keep down the number of components, prefabrication may lead to excessive expense and delay, and even under favourable circumstances it economises in time and in normal building labour and materials rather than in cost. When bulk ordering of prefabricated units is employed, it tends to react against flexibility in designing subsequent schools, as it largely precludes the carrying out of variations and improvements, the desirability of which may become apparent when the original school is being erected.

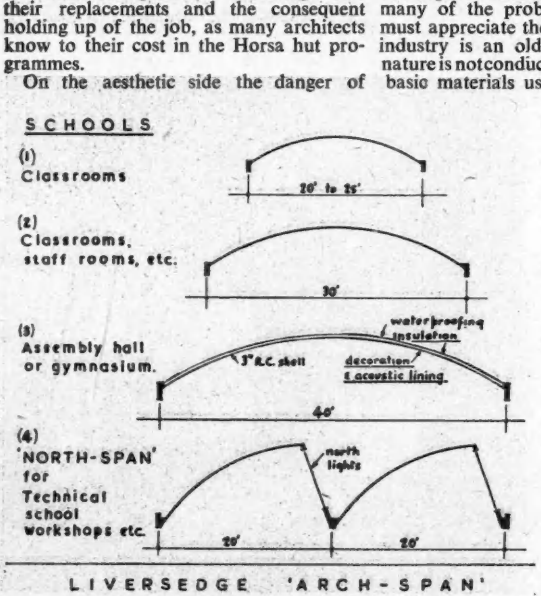
The prefabricated components must stream from the factory at the right time, and at the desired rate, to avoid a hurried search for extra storage accommodation on the one hand, or expensive delays to the job on the other. Then there is, of course, the question of breakages and their replacements and the consequent holding up of the job, as many architects know to their cost in the Horsa hut programmes.

On the aesthetic side the danger of monotony must be recognised. It is encouraging that the Ministry of Education, for the first time, recommends that more aesthetic finish must be given to our school buildings and their surroundings, and here it is interesting to note that the Hertfordshire County Council has allocated 1 per cent. of the building costs for art (i.e., wall painting and sculpture, etc.), and I would like to take this opportunity of congratulating that Authority on this step, which I trust will be followed by others. In Kent we have in some small measure employed the pupils of our schools of art to carry out such work, and it is hoped to do this more extensively in schools now nearing completion.

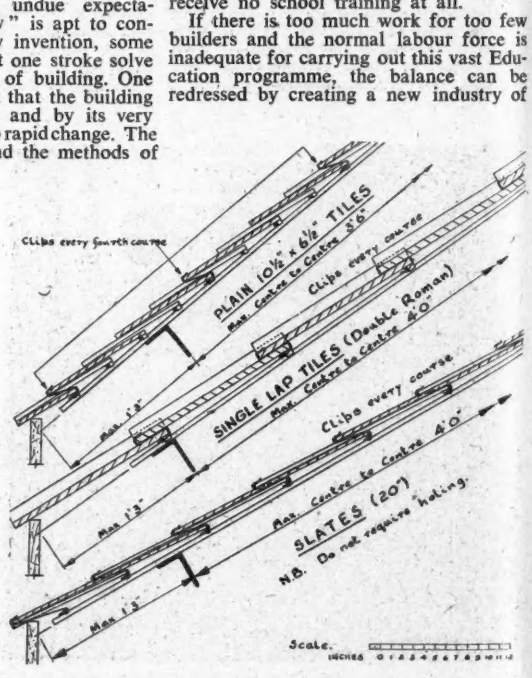
There is perhaps some danger that the phrase "the employment of new materials" may raise undue expectations. The word "new" is apt to connote some striking new invention, some development that will at one stroke solve many of the problems of building. One must appreciate the fact that the building industry is an old one, and by its very nature is not conducive to rapid change. The basic materials used and the methods of building have behind them long ages of slow development and inherited experience. New methods and materials have to be grafted on to an established body of practice, and used by the existing craftsmen and labour forces. This is a more difficult operation than might be imagined.

The building industry contains a large number of firms, and of the total labour force, over 30 per cent. are employed by small firms having less than 20 men each, and rather less than 40 per cent. by large firms with more than 100 men each. The craft training given in building schools can only be slowly changed and cannot take any serious account of new methods of construction and new materials until the extent of their use warrants it, whilst many apprentices receive no school training at all.

If there is too much work for too few builders and the normal labour force is inadequate for carrying out this vast Education programme, the balance can be redressed by creating a new industry of



LIVERSEDGE 'ARCH-SPAN' SHELL CONCRETE CONSTRUCTION.
typical shell sections



"Precision" roofs, showing method of clipping tiles, etc., to light steel purlins.

prefabrication; the normal labour force can be increased by the apprentice-training scheme; and far greater use will be made by the employers of the many power-driven tools and equipment on the market, which can reduce man-hours and at the same time enable a job to be done better and more quickly.

Most traditional building is done by hand labour, but a campaign is now in progress to increase the use of power-driven tools and to develop suitable mechanical plant for many of the typical operations in building, such as digging foundation trenches and basements, moving scaffolding up and down, hoisting materials, punching holes through walls, plaster spraying, etc. Existing machinery such as is used in large civil engineering works is usually too large or cumbersome for most building work.

These methods, when developed, will inevitably influence the choice of building materials and components.

Much stress is now being laid on the improvement of heat insulation, so that schools may be kept warm for the minimum consumption of fuel. This has stimulated interest in many forms of lightweight structural units which combine good thermal insulation with adequate strength for the loads to be carried, or of sheet materials of good insulation properties which can be used as linings to external walls and decking. One such experiment is to be carried out in the insulation of a school at Dover by the employment of "double glazing" and the use of thermostatic heat controls.

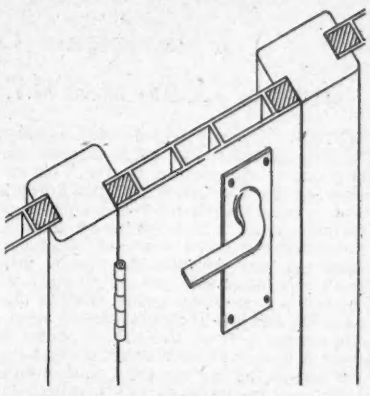
Use of Industry's By-products.

An important source of new or modified building materials is to be found in the persistent attempts of modern industry to use all its by-products, since the building industry with its potentially large demand is often a favoured outlet. Examples of this are: (1) slag from pig-iron production; (2) clinker; (3) surplus straw from agriculture; (4) sawdust; (5) sand waste, from china clay workings; (6) peat, which has been used as an aggregate in concrete for the construction of buildings in the island of Skye, and (7) pulverised hard woods for mastic floors.

The development of prestressed concrete units for suspended floors has obvious attractions, and is receiving much attention, as it is claimed to save about 80 per cent. of steel, compared with ordinary reinforced concrete.

Mr. Loweth then showed on the screen illustrations of some methods of construction and materials now being employed in post-war schools, some of which accompany this paper.

In conclusion, the lecturer reiterated a plea which he had made some two years ago when serving on some of the Ministry of Works Committees which were dealing with school matters, that to correlate the activities of all the numerous authorities who were so busily engaged in the design and erection of schools, a permanent but ever-changing exhibition of working drawings of the buildings and equipment together with samples and photographs of the materials now being employed should be formed in London, the initial step to be taken by the Ministry of Education as the over-riding Authority. The answer given at that time was that neither building nor staff

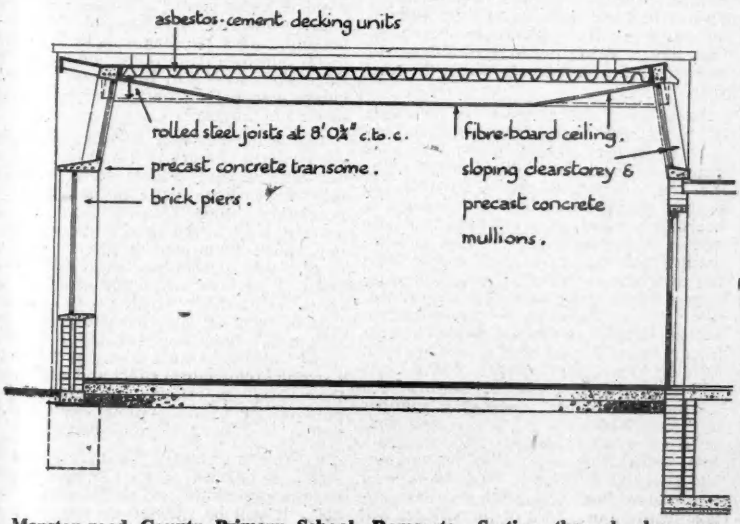


"Holoplast" partitioning.

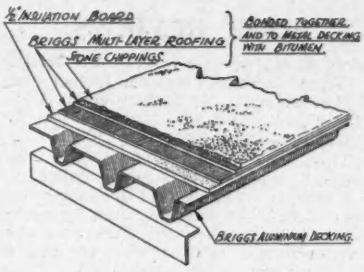
were available. "Since then," said Mr. Loweth, "some of the Government controls have been removed, and perhaps the changed circumstances may permit of this being carried out. The R.I.B.A. Schools Exhibition which had recently been touring this country and the Continent could well be used as a nucleus."

Discussion.

Mr. Hiorns, who presided, reminded the company that Chadwick, who was



Manston-road County Primary School, Ramsgate. Section through classroom. H. V. Lobb, F.R.I.B.A., architect.



"Briggs" multi-layer roof construction.

born at the beginning of the nineteenth century, did his principal work between 1830 and 1855, which was a pretty bad period from the point of view of housing conditions and a great disgrace to the Victorian era. Why the coming of the mechanical age should have meant such extreme neglect of housing conditions for the workers it was difficult to understand. There were sordid concentrations of mean streets, deprived of all amenities, and housing from 400 to 700 persons to the acre. They spoke now in rather a guarded way of 100 persons to the acre, which, personally, he thought was going to the other extreme. Chadwick in 1832 was appointed Deputy Commissioner for the Poor Law, and quite rightly recognised that the disease and high mortality of the period were due to housing conditions. He was the author of a magnificent report bearing on the insanitary conditions prevailing in England—a report which had a great deal to do with the passing of the Public Health Act, 1848.

Mr. W. H. Hobday, in proposing a vote of thanks to Mr. Loweth for his paper, said that all who were concerned with building were accustomed to receive by almost every morning's post illustrated pamphlets describing new materials. These multiplied so fast nowadays that it was almost impossible to keep check upon them. Therefore the opportunity was the more to be welcomed of learning from a man of great experience, whose business compelled him to keep abreast with modern constructive methods, how far the claims were valid, and what materials were the best to use in given circumstances.

POLICE HOUSES IN I.O.W.

Police houses are to be built in the Isle of Wight at a cost per house of over £2,370. This, states a correspondent, is after effecting reductions on the instructions of the Home Office. The Hampshire Police Authority accepted last year tenders for the erection of six houses in the Isle of Wight. The Home Office declined to approve these tenders on the ground that they represented a cost for the houses alone which exceeded "acceptable" figures. Since then, by reducing the amounts allowed for contingencies, and by slightly amending the specifications in respect of flooring, roofing, paving, road reinstatement, sanitaryware and ironmongery, it will be possible to effect a reduction of £600. If these reductions are accepted by the Home Office, even so the total price will be £14,242 19s. 10d. It is explained in an official report, adds our correspondent, that because of transport difficulties the cost of erecting houses in the Isle of Wight is higher than that for mainland houses. Furthermore, the number of persons in the island who are prepared to submit tenders under the requirement of priced bills of quantities, is limited.

BOOK REVIEWS

MODERN HOUSING ESTATES. A Practical Guide to their Planning, Design and Development. By Stanley Gale, A.M. Inst.M.E., M.R.S.I. (London: B. T. Batsford, Ltd.) Price 35s. net.

This book is intended to give the reader "a clear and concise outline of all matters affecting the planning and construction of housing estates, the creation of neighbourhood units and the development of satellite towns on garden city principles." It embodies a wealth of practical information on road construction, drainage, sewers, layouts, building densities, lighting, housing standards, finance and administration of estates, housing and town and country planning Acts, and other relevant legislation, and includes plans and photographic illustrations of many private and local authority estates; at Letchworth, Welwyn, Port Sunlight, Bournville and Hampstead, and at Birmingham, Liverpool, Glasgow, Manchester, Leicester, Nottingham, Edinburgh and Belfast. Many of the plans and other illustrations are reproduced to a large scale in the form of folders. The standard of production is admirable. The book is written from the point of view of the civil engineer and surveyor; hence there is little about aesthetics. One or two of the illustrations are below good standard: for instance, the example of a builder's road (p. 89), and the specimen of a private street works plan (p. 93). It is also difficult to understand why, in the section on prefabricated houses, the early, and rejected, plan for the M.O.W. house should be illustrated and no others. These, however, are minor criticisms of a work which is of great practical value.

ROOF BOSSES IN MEDIEVAL CHURCHES. By C. J. P. Cave, M.A., F.S.A. (London: Cambridge University Press.) Price 35s. net.

The subject of medieval roof bosses has not hitherto been greatly pursued; its literature is comparatively small and unequal in scope and value. The reason for this neglect is to be found, no doubt, in the inaccessibility of the bosses, high up in the vaulted roof of church and cathedral, to be seen only indistinctly with the naked eye and little better with the aid of ordinary photography. Their inaccessibility, however, has been a blessing in disguise, for it has saved them from the destruction, restoration or defacement which has overtaken so much medieval work. Here, for the first time, in a book of extraordinary interest and value, we are able to appreciate fully the wealth and beauty of unspoiled medieval craftsmanship that we still possess in the form of roof bosses.

Mr. Cave has studied the subject closely for the past 20 years, during which time he has photographed more than 7,000 examples by means of the spotlight and the telephoto lens. He has now made a representative selection of 368 of these, which are here beautifully reproduced by the half-tone process on stout art paper, to show all their richness and complexity of detail. In a scholarly general survey of his subject Mr. Cave traces the evolution of the roof boss from Norman times onwards through the medieval period to the Reformation, even into the Renaissance, describing in detail a great number of examples. The subject matter of these carvings is extraordinarily varied, embracing biblical, religious and secular scenes and figures, as well as human heads—many, no doubt, copied from life—beasts, birds, fish, foliations, etc. One cannot but be amazed at the extraordinary quality of most of these carvings, the accomplishment of their craftsmanship and the variety of mood they display—reverence, humour, grotesque fancy and, occasionally, vulgarity. Clearly the medieval carver was not only an accomplished artist but a very human being.

Mr. Cave has produced what may be described without exaggeration as a unique book which, though its main appeal is naturally to the archæologist, the student and the artist, is of great interest to all who have any appreciation of medieval art. For those who wish to pursue the subject further there is an appendix giving a very full list of churches containing roof bosses, together with scholarly descriptive notes, while for those who are interested in photography, there is another appendix giving a concise account of the technical methods adopted by the author. To the ardent enthusiasts of medieval art who have hitherto strained their eyes ineffectually upwards towards these remote carvings this wealth of illustrations will be a revelation such as Chapman's *Homer* was to Keats; they will feel that a new planet has swum into their ken.

G. J. H.

*** *Books reviewed in these columns may be obtained on application to the Publisher, "The Builder," 4 Catherine-street, Aldwych, W.C.2. Cash should accompany the order.*

TWO FOREST VILLAGES

for the Forestry Commission (England)

THOMAS SHARP, M.A., M.T.P.I., PLANNING CONSULTANT

SINCE the early 1930s, the Forestry Commission has been engaged on large-scale afforestation in the Cheviot Hills on the English side of the Border, and in some districts of Northumberland further south. The Commission already holds some 500,000 acres of plantable land. A very considerable part of this is already afforested, and the planting of the rest is proceeding rapidly. During the next 50 years it is likely that further areas, amounting to twice the size of those at present held, will be planted; so that by the end of the century the Commission's forests in this part of Northumberland will cover more than 150,000 acres of what until recently was wild and more or less unproductive hill country.

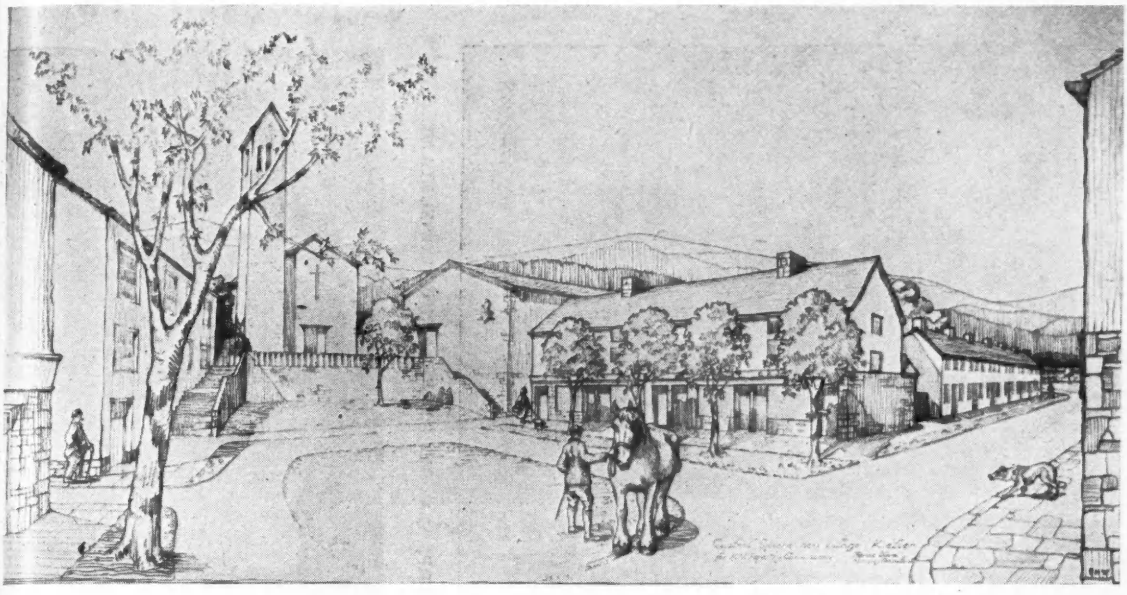
Hitherto the Commission's housing has been undertaken in scattered groups so situated for the forest workers to be able to deal with the ever-present menace of fire. But now that a very large housing programme must be undertaken, both for future planting operations, and for the management of the great areas already planted, it has been decided that a programme of village building shall be embarked on. Eight large new villages will be established during the next decade—several of them will, indeed, be well on the way towards completion by the end of that time. Work on four of them will probably have been begun within the next year.

Because of the necessity of avoiding excessive travel to and from work, and because of the need to have large numbers of men immediately available for fire fighting, the villages will be situated as far up into the forest as good siting permits, bearing in mind social considerations as well as such other considerations as topography, and the provision of public utilities and other services. The terrain provides extremely few satisfactory sites, but, after a very thorough survey, attractive well-sheltered sites that are generally satisfactory from all points of view have been fixed on for all eight villages. The villages will necessarily be somewhat remote from existing settlements. But their number has been fixed so that every village shall be of a size to be able to provide a reasonable, satisfactory social life of its own, and shall be sufficiently large to support a primary school and other necessary village institutions. Two of the villages will eventually have a population of approximately 800 or more, and none of the remainder will have less than 350. The new villages will not only contain social facilities for their own population; they will make them available for existing small hamlets which have none, so that it may be possible to provide at least some community life from the very beginning. It has been decided that, in every case, the first building programme shall be of not less than 25 houses; that there shall generally be as many more as can be arranged in the prevailing circumstances; and that each village that has been begun shall be completed as soon as possible. Plans of two of the first four villages, on which work is shortly to begin, are shown in the accompanying illustrations.

KIELDER will contain some 220 houses, and so will have a population of about 800. The site is, for the most part, a level bowl at the junction of two mountain rivers, the North Tyne and the Kielder Burn. It is right in the heart of the Cheviots, and the hills ring it round, though nowhere in the immediate vicinity do they rise so sharply as to darken it or shut it in unduly, and there is a considerable gap through the river valley to the south. On the north of the main part of the site, on a considerable local eminence, stands Kielder Castle, a nineteenth-century hunting lodge of the Dukes of Northumberland. This building will be used for social purposes (clubrooms, etc.); and the slopes around it will become one of the village greens, the frontages beyond being framed by houses.

The layout has been designed to secure good village character. Since this village will act as a kind of local capital, a fairly substantial village centre has been planned to contain a dozen shops and a couple of pubs, as well as the church and a village hall where films can be shown once or twice a week. This has been deliberately designed to take advantage of a terrace about 12 ft. high which occurs on this part of the site, and the church and the village hall have been situated at the top of the terrace in such a way as to create a strong architectural effect and emphasise their social importance. A detail of the planning here, and a preliminary sketch design, are shown in the illustrations.

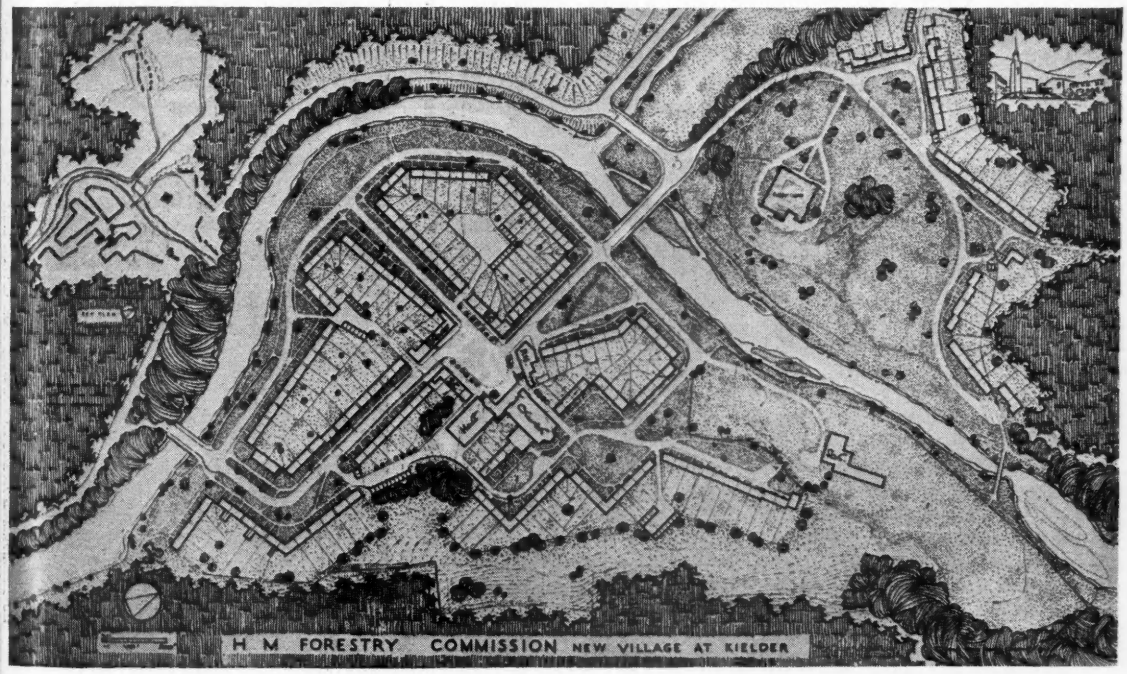
COMB will be one of the smaller villages and will contain some 125 houses and have a population of rather more than 400. It will be situated on the three or four level fields of a hill farm at the head of the narrow valley of the Tarset Burn.

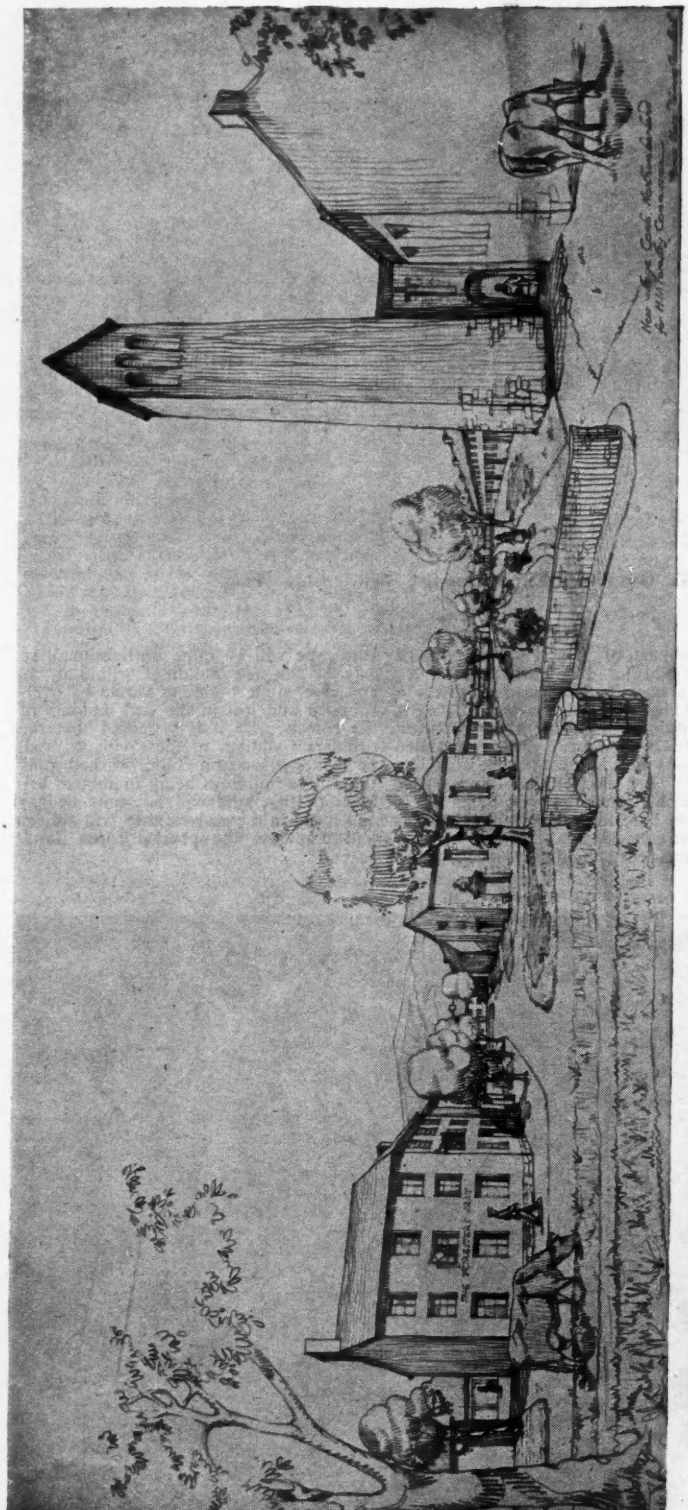


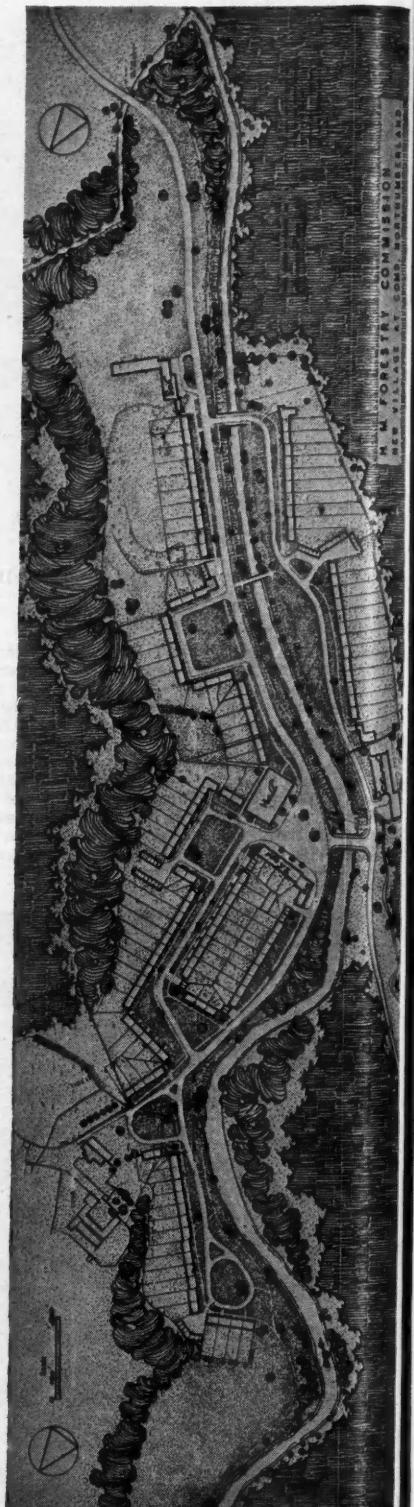
THE PROPOSED VILLAGE OF KIELDER: Perspective view. *Below*: **Plan.**

Again, though the hills rise from the very boundaries of the site, they are of so moderate a slope that the village will not seem darkened or hemmed in, and again a wide gap is made in the hills by the river valley to the south. On its long narrow level site, with a mountain stream running through it, this village will have a most delightful situation and setting, and every effort has been made in the design of the layout to give it a true village character. A sketch of the southern part of it and of the village centre is illustrated on next page.

Careful consideration has been given to the building materials in these villages. The traditional material in the scattered buildings of this very thinly populated countryside is stone, with stone slabs for the roofs. But the traditional appearance of the whole landscape will be changed; instead of bare hills there will be, as far as the eye can see, great distances of blue-green forest. It is held that since the new landscape will be quite untraditional, so may be the new buildings within it. In any case, stone buildings would be oversubdued and lost in the dark colours of the forests. So it is proposed that the ordinary buildings of these villages shall be whitewashed and colour-washed, only the public buildings being in stone. Villages of this kind will not only be gay and lively in themselves; they will enliven and humanise the general forest landscapes.







THE PROPOSED VILLAGE OF COMB. Perspective view. *Below*: The plan. THOMAS SHARP, M.A., M.T.P.I., PLANNING CONSULTANT.

NEW GARAGE, LEWISHAM

JOHN CARR, B.Sc., M.I.C.E., M.I.Mun.E., Borough Engineer and Surveyor

THIS garage, opened on April 9, is a reinforced concrete framed building which covers an area of 41,500 sq. ft. It has an average length of 250 ft. and its width of 166 ft. is made up of two large central spans, each of 60 ft., with a 31-ft. wide span on one side and a 14-ft. lean-to on the other.

Four rows of vehicles are parked in the two 60-ft. wide spans, each being allotted one of the diagonally-arranged berths. Heating ducts with perforated sheet steel covers constructed in the floor run the length of the building below the bonnets of the parked vehicles, so that heat rising by convection warms both radiators and engines.

Service pits and wash-down bays are accommodated in the 31-ft. wide section of the building. The five service pits are each fitted with access ladders, flame-proof electric lighting and covers. There are four wash-down bays, where two two-gun washing machines are installed, enabling all cars to be cleaned every 24 hours, and other vehicles twice a week.

STRUCTURE.—The framing is of proprietary form* and is the subject of certain patent rights. It consists of reinforced concrete main transverse frames spaced at 15-ft. centres and carrying reinforced concrete purlins, lintols and trough-shaped valley gutters, all of which are cast on the ground and jointed together after erection with simple site connections. Joint treatment is devised to effect structural continuity or provide pin-jointing as the design demands.

Owing to the nature of the foundations, the majority of the posts, although set 1 ft. 6 in. into their bases, could not be regarded as fully restrained and for design purposes were assumed to be pin-jointed. In other respects the two main spans of the transverse frames were treated as rigid. The adjacent 31-ft. frame and the 14-ft. lean-to are pin-jointed to the main frame. These pin joints are formed by means of short lengths of R.S.J. cast into one member and grouted into a pocket left in the other.

Loading is in accordance with L.C.C. regulations: 15 lb. per sq. ft. vertical superload on roofs, alternate slopes loaded, and 15 lb. per sq. ft. wind pressure on the upper two-thirds of the walls. The design was approved by the London County Council under the provision of Part IV of the London Building Acts (Amendment) Act, 1939.

CONSTRUCTION.—The new concrete floor is divided into sections 15 ft. wide by 14 ft., 60 ft. and 31 ft. long. In the 60-ft. wide bays these sections were further divided by the heating ducts which were formed *in situ* as the floor was laid.

The five service pits are each 21 ft. long by 4 ft. wide and 4 ft. 6 in. deep. They are constructed with inner brick walls 4½ in. thick, finished internally with white cement paint and backed with a concrete filling between the wall and the bank of the excavation.

The drainage pits to the four washing bays each have an area of 20 ft. by 10 ft. and are 12 in. deep. They are made up of a series of troughs, constructed with 6-in. glazed stoneware drainage channels benched up on either side and placed at 12-in. centres. These troughs fall at a gradient of 1 in 60 to a collecting trough at the lower end. The pits are covered by perforated steel sheets laid flush with the floor surface, and at right angles to the direction of the channels. This perforated steel sheet, like that used to cover the heating ducts, is Government surplus "Pierced Steel Planking" as used in temporary road and runway construction during the war.

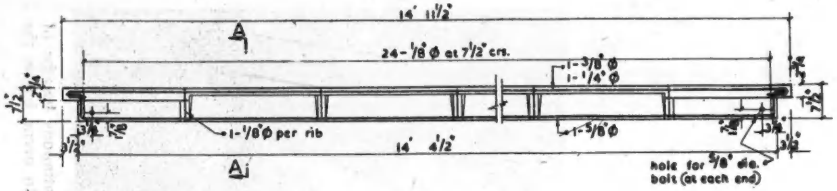
The new floor was used as a casting bed for the framing and after a large enough area had been laid, work on the framing and floor proceeded concurrently. To reduce handling all main members were cast as near as possible to the places in which they were ultimately erected. Moulds were of teak, faced with steel strips on the top edges and braced where necessary by steel members on the outside to maintain precision. The concrete was the "1:1½:3 nominal mix" of the British Standard Code of Practice (CP 114 [1948]) made with rapid-hardening cement, coarse aggregate graded ¼ in. to 3/16 in. and a reduced water-cement ratio. Compaction was by vibrators attached to timber platforms which were placed on the mould and moved slowly along its length.

A three-ton mobile crane was used for erecting the main units. The top double rafter section of the 60-ft. spans was so long that the stresses induced by lifting at the centre would have been serious and a special timber cradle, of truss form, was designed to overcome this difficulty. When attached to the unit it was lifted by the apex and gave two-point support at a

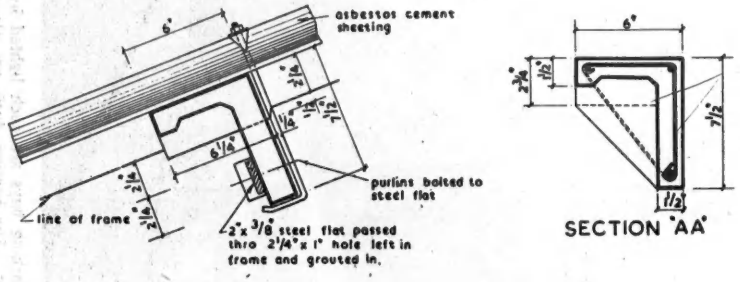
Openings to washing bays and service pits which were fitted with rolling shutters.

The 60-ft. span parking bays are each lighted by continuous lengths of patent roof glazing. The heating ducts are planned to occur below the bonnets of the parked vehicles.

* The "Lambda" system, designed and controlled by R. E. Eagan, Limited.

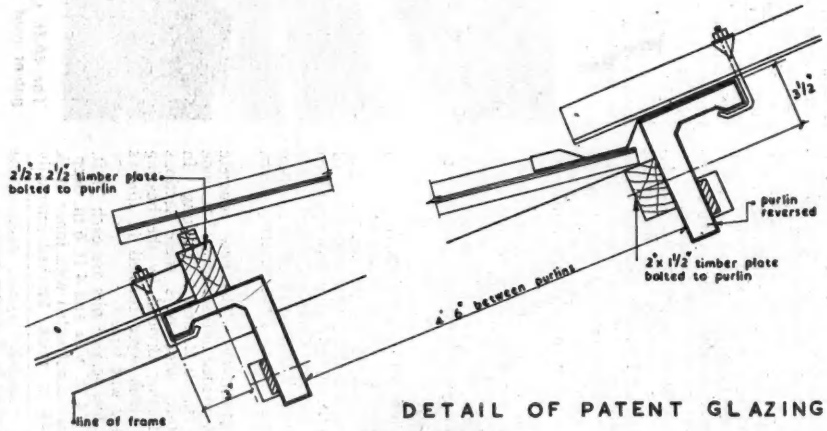


ELEVATION


asbestos cement sheeting
6"
6½"
purlins bolted to steel flat
line of frame
2"x 3/8" steel flat passed thro 2¼"x 1" hole left in frame and grouted in.

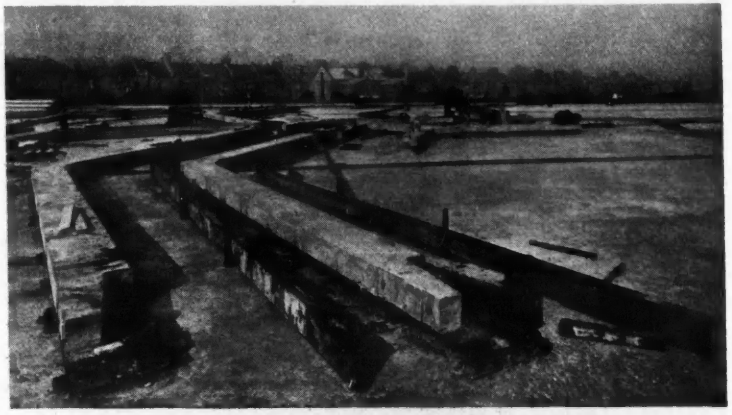
SECTION "AA"

STANDARD PURLIN DETAILS

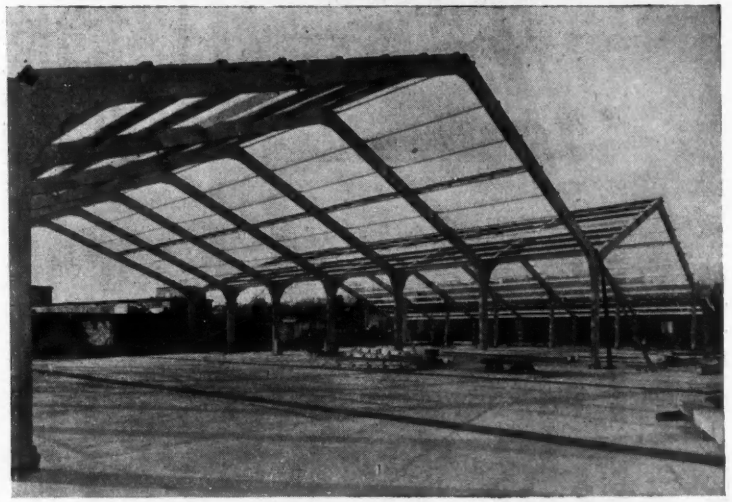

2½" x 2½" timber plate bolted to purlin
3½"
purlin reversed
2"x 1½" timber plate bolted to purlin
6' 6" between purlins
line of frame

DETAIL OF PATENT GLAZING

Constructional details.



Casting was carried out on the floor of the building.



Methods of jointing are to be seen in the partly-erected framing.

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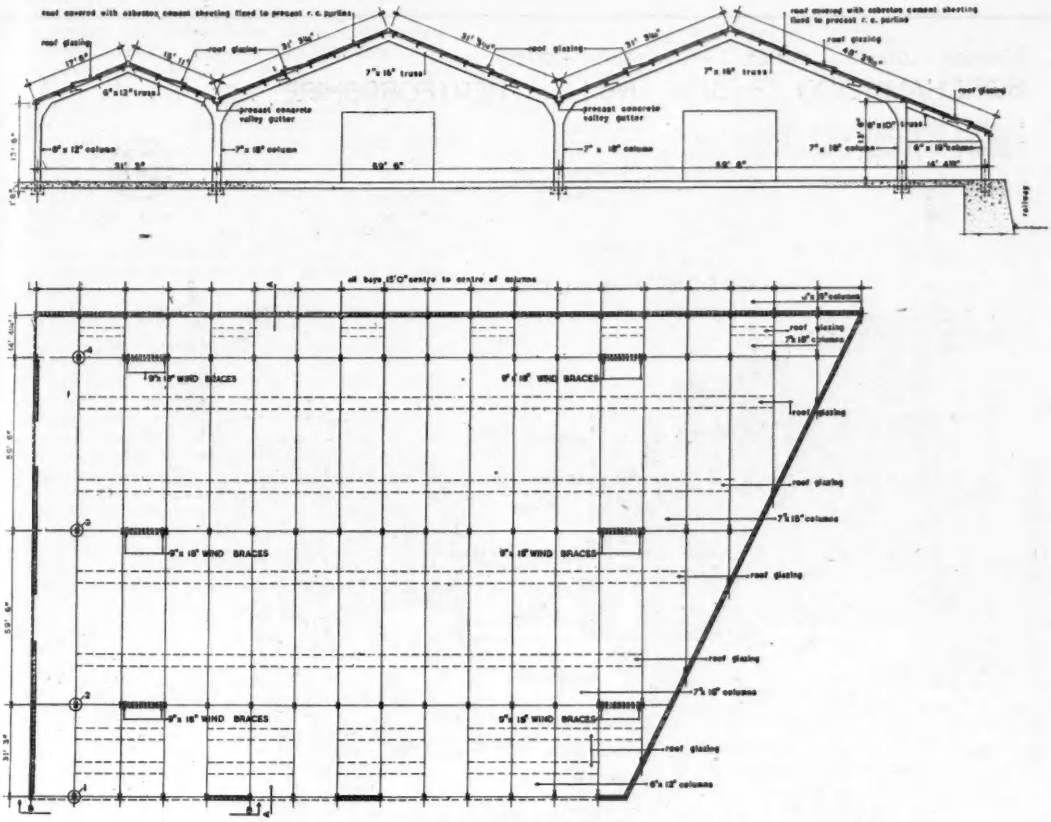


NEW GARAGE, LEWISHAM. Plan and cross-section.

distance from the ridge such that the bending moment could safely be taken by the section as designed for its normal conditions.

The procedure was to place the posts of two adjacent frames in the tapered pockets left in the foundations, keeping them in position with timber wedges. The double rafter sections were next placed in position and the bolts of the scarfed joints passed through but left slack. Minor adjustments to the posts could be made as necessary by knocking in or loosening the wedges. When the purlins had been fixed and all bolts tightened, the posts were plumbed up and grouted into the foundation pockets.

The valley gutters have simple butt joints made with mastic at the centre line of each frame.

Timbers are bolted to certain purlins for fixing the glazing and to the side lintols to take up the slope and provide a fixing for the roof sheeting.

The external walls are all built of 18 in. by 9 in. by 9 in. hollow concrete blocks laid in mortar composed of one part cement, one part lime, and five parts sand. At main entrance openings, which are fitted with sliding doors hung on overhead track, the vertical reaction at the lintol bearing is of the order of 2.9 tons and here the walling is strengthened by ¼-in. diameter bars and a concrete filling placed in the cores of the blocks.

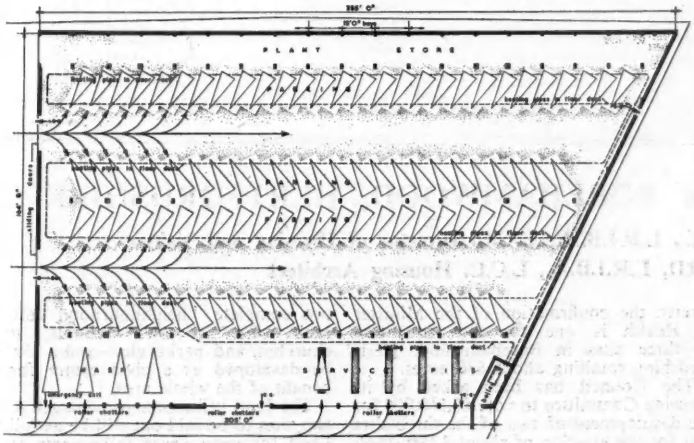
Along the south-eastern side the 11 entrance openings to service washing and other bays are all fitted with steel roller shutters. Ventilation to deal with heavier-than-air gases is provided by blocks laid sideways at appropriate intervals low down in the walling.

The roof covering consists of asbestos-cement sheeting and continuous strips of patent roof glazing. The asbestos-cement is large section corrugated sheeting with ventilating-type ridging to match. The glazing is ¼-in. wire glass and the bars are of aluminium alloy.

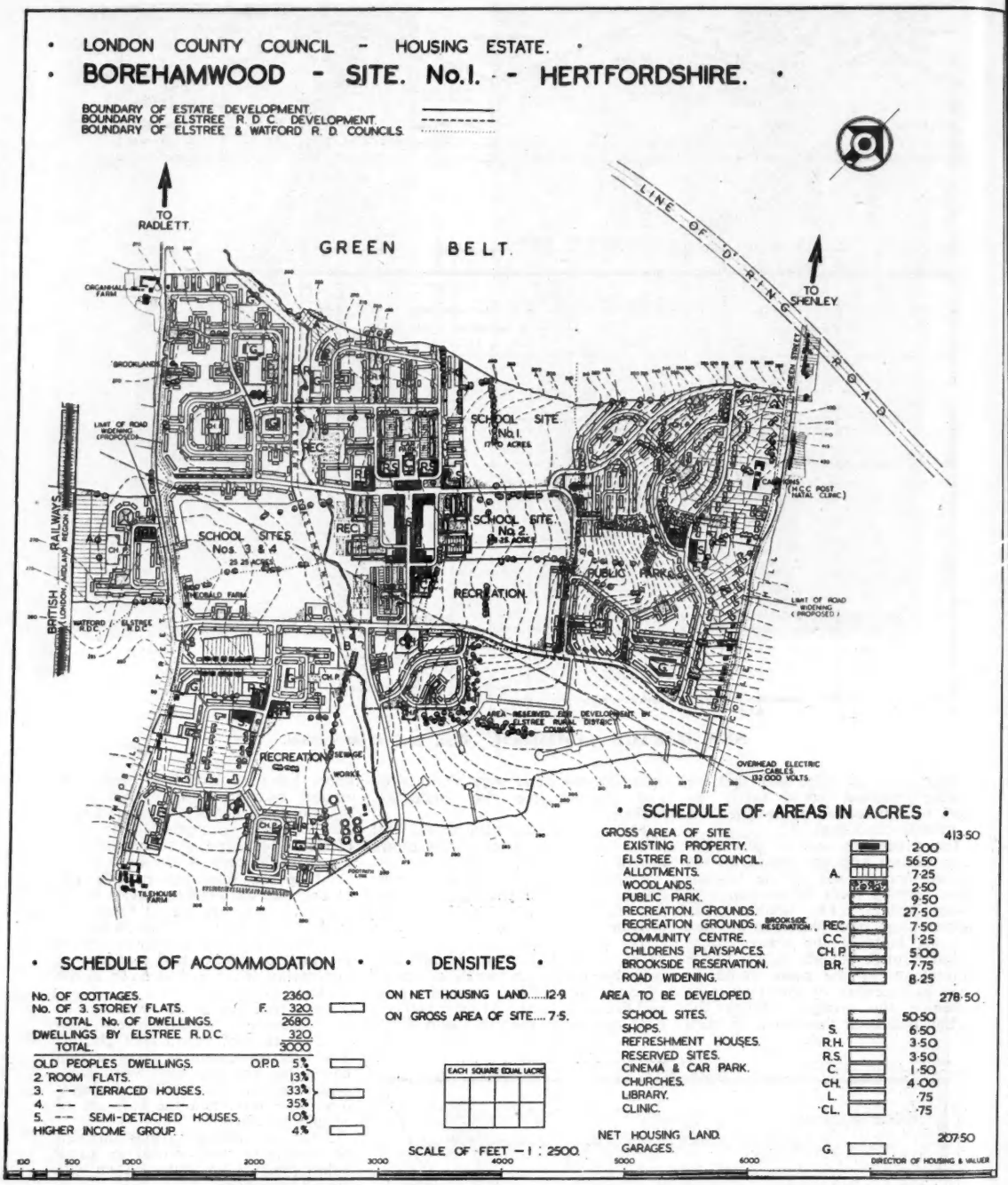
After considering various methods of heating, it was decided to install a low pressure hot water system with forced circulation.

Building work other than that of the structural frame and roof covering was undertaken by the Lewisham Borough Council by direct labour, under the general direction of Mr. John Carr, B.Sc.(Eng.), A.C.G.I., M.I.C.E., M.I.Mun.E., and under the immediate supervision of Mr. O. H. Mitchell, A.M.I.Struct.E., A.M.I.Mun.E., M.R.San.I., a senior engineering assistant. Site work was started on June 7, 1948.

Casting and erection of the framing, which was carried out by R. E. Eagan, Limited, of London, S.W.1, began on September 3 and was completed on December 5.



Parking plan.


• LONDON COUNTY COUNCIL - HOUSING ESTATE. •
• BOREHAMWOOD - SITE. No.1. - HERTFORDSHIRE. •
BOUNDARY OF ESTATE DEVELOPMENT
BOUNDARY OF ELSTREE R.D.C. DEVELOPMENT
BOUNDARY OF ELSTREE & WATFORD R.D. COUNCILS
TO RADLETT
GREEN BELT
LINE OF 'D' RING ROAD
TO SHENLEY
SCHOOL SITE No.1 17·70 ACRES
SCHOOL SITE No.2 25 ACRES
SCHOOL SITES Nos. 3 & 4 25·25 ACRES
RECREATION
PUBLIC PARK
RECREATION
AREA RESERVED FOR DEVELOPMENT BY ELSTREE RURAL DISTRICT COUNCIL
BROOKSIDE RESERVATION
LIMIT OF ROAD WIDENING (PROPOSED)
BRITISH RAILWAYS (LONDON MIDLAND REGION)
OVERHEAD ELECTRIC CABLES 132 000 VOLTS
• SCHEDULE OF ACCOMMODATION •
No. OF COTTAGES. 236.
No. OF 3 STOREY FLATS. F. 32.
TOTAL No. OF DWELLINGS. 268.
DWELLINGS BY ELSTREE R.D.C. 32.
TOTAL 300.
OLD PEOPLES DWELLINGS. O.P.D. 5%
2 ROOM FLATS. 13%
3. — — TERRACED HOUSES. 33%
4. — — — — 35%
5. — — SEMI-DETACHED HOUSES. 10%
HIGHER INCOME GROUP. 4%
• DENSITIES •
ON NET HOUSING LAND.....12·9
ON GROSS AREA OF SITE....7·5.
EACH SQUARE EQUAL 1 ACRE
SCALE OF FEET — 1 : 2500
• SCHEDULE OF AREAS IN ACRES •
GROSS AREA OF SITE 413·50
EXISTING PROPERTY. 2·00
ELSTREE R.D. COUNCIL. 56·50
ALLOTMENTS. A. 7·25
WOODLANDS. 2·50
PUBLIC PARK. 9·50
RECREATION GROUNDS. 27·50
RECREATION GROUNDS. BROOKSIDE RESERVATION. REC. 7·50
COMMUNITY CENTRE. C.C. 1·25
CHILDRENS PLAYSPACES. CH.P. 5·00
BROOKSIDE RESERVATION. B.R. 7·75
ROAD WIDENING. 8·25
AREA TO BE DEVELOPED 278·50
SCHOOL SITES. 50·50
SHOPS. S. 6·50
REFRESHMENT HOUSES. R.H. 3·50
RESERVED SITES. R.S. 3·50
CINEMA & CAR PARK. C. 1·50
CHURCHES. CH. 4·00
LIBRARY. L. ·75
CLINIC. CL. ·75
NET HOUSING LAND. 207·50
GARAGES. G.
DIRECTOR OF HOUSING & VALUER

L.C.C. HOUSING AT BOREHAMWOOD, HERTFORDSHIRE

CYRIL H. WALKER, O.B.E., L.R.I.B.A., L.C.C. Director of Housing and Valuer
S. HOWARD, L.R.I.B.A., L.C.C. Housing Architect

THE London County Council's Housing Committee plan to acquire land both inside and outside the County of London for 100,000 dwellings. Much of this land (particularly for the large out-County cottage estates) is being acquired by compulsory purchase. The Council have approved more than 100 Compulsory Purchase Orders since the end of the war. The latest of these Orders to receive the confirmation of the Minister of Health is one for the acquisition of three sites in Borehamwood, Hertfordshire, totalling about 630 acres.

The Council has been asked by its Housing Committee to vote £7,160,000 for the development of two of the three sites and for the erection of about 4,180 dwellings.

It is hoped to provide in the scheme two complete "neighbourhood units"—each with its own schools, shops, churches, and parks, etc.—and a site will be developed as a civic centre for the benefit of the whole area.

The land utilisation percentages on the two sites to be laid out will be as follows: Land for open space (allotments, woodland, public park, recreation grounds, children's playgrounds, school playing

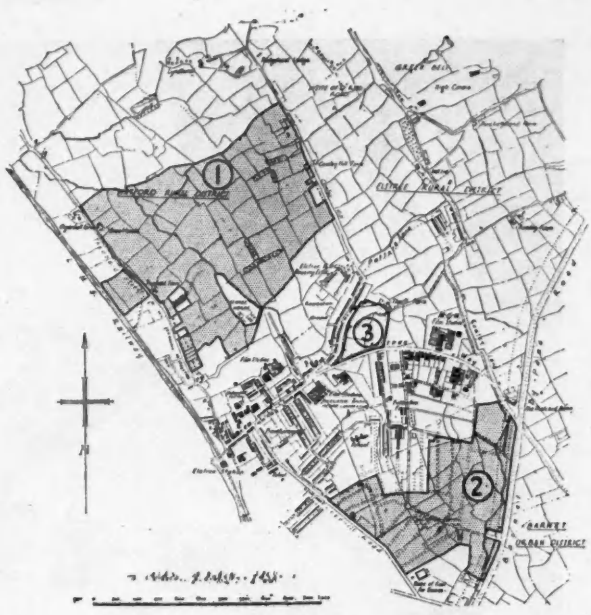
fields, etc.)—29.3 per cent.; land for housing—60 per cent.; land for other purposes (road widening, school buildings, shops, refreshment houses, cinemas, churches, library, clinic and community centre)—10.7 per cent.

The net residential density on Sites 1 and 2 will be 46.4 and 44.25 people to the acre; 168 acres are reserved for open space compared with 150 recommended in the County of London Plan.

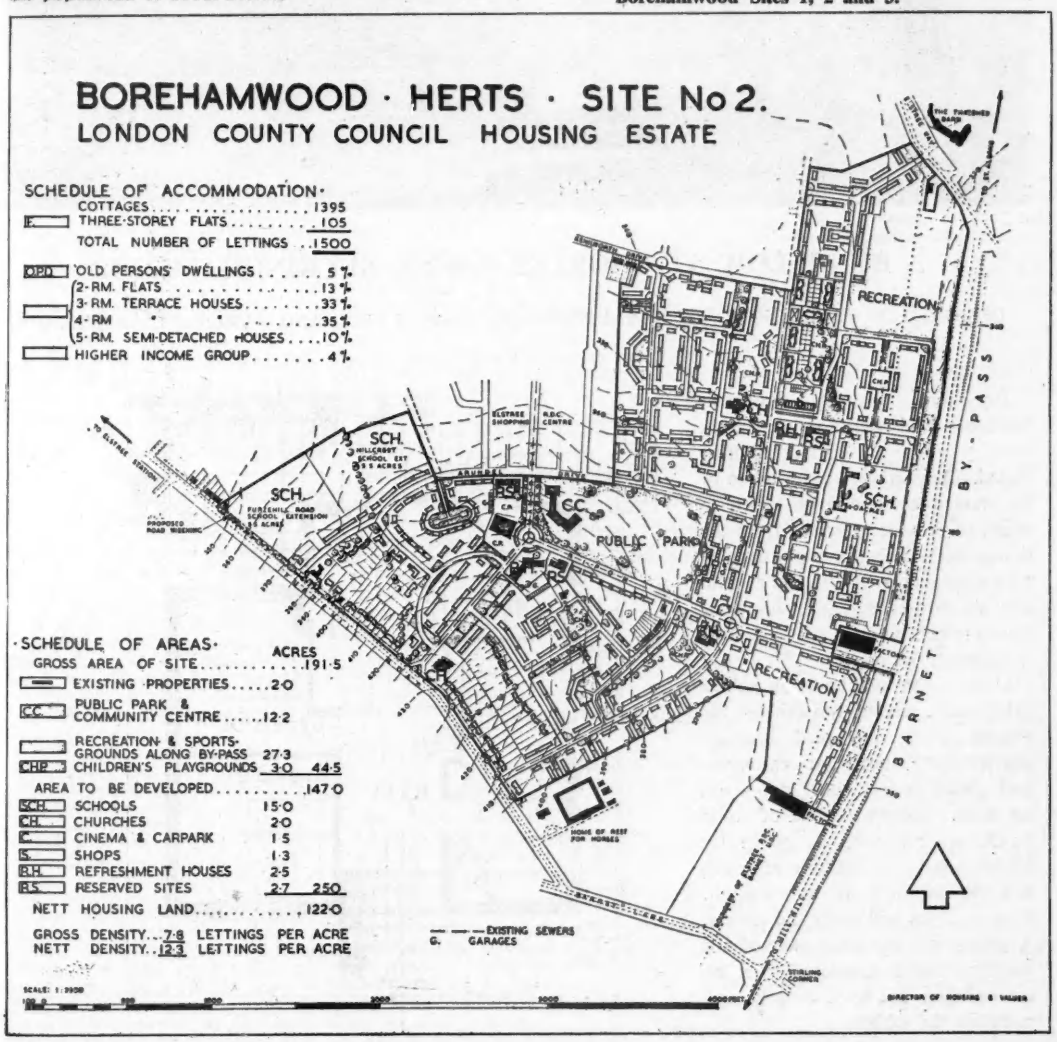
Site No. 3 will be used for a civic centre to be planned later.

The local authorities concerned in the three sites, Herts County Council, the Elstree and Watford Rural District Councils and the Barnet Urban District Council, are to take part in the planning and development of the whole of this area.

Existing industry, together with development of other land in the neighbourhood zoned for industry, will provide adequate employment for the projected population of 33,000. Borehamwood, it is emphasised by the London County Council, will not be a "dormitory development," and the new estates of the L.C.C. outside the County occupy in total less than 1 per cent. of the Abercrombie Green Belt. Sir Patrick Abercrombie recognised when preparing the Greater London Plan that 125,000 people would have to be rehoused in the Green Belt, and for Borehamwood the Advisory Committee on the Greater London Plan recommend expansion of Elstree and Borehamwood to 33,000 persons. The Council's proposed development will bring the population to about 20,000.



Borehamwood Sites 1, 2 and 3.

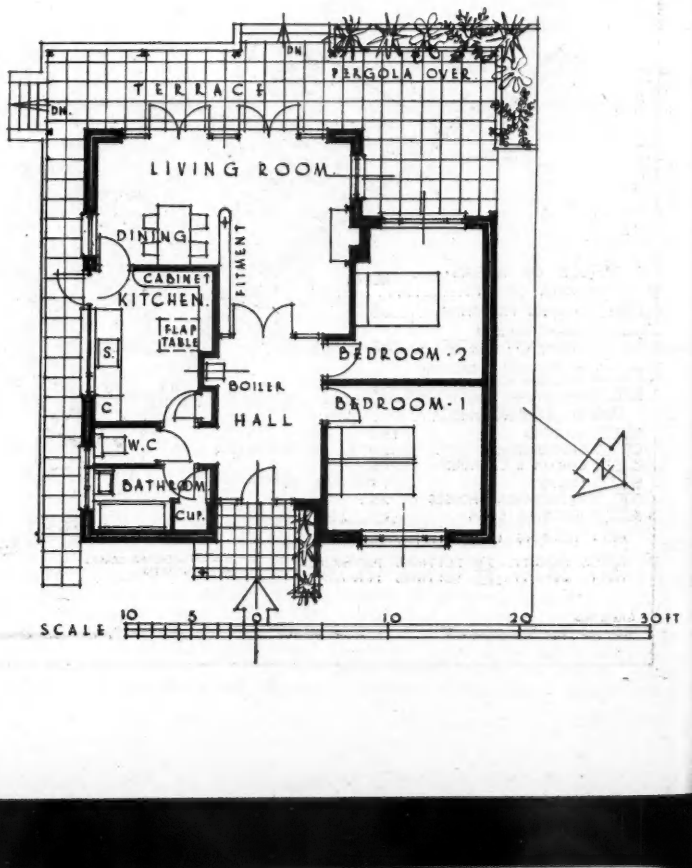


A BUNGALOW AT CHORLEY WOOD, BUCKINGHAMSHIRE

DESIGNED BY F. J. TINGEY (OF KENNETH LINDY, JOSEPH HILL AND PARTNERS, ARCHITECTS)

THE SITE OF THIS PROPOSED bungalow is in charming undulating country on the outskirts of Chorley Wood. Advantage will be taken of the moderate slope from north to south to provide a terrace from the living-room. This will be constructed with a pergola over, and will eventually be provided with removable glazed screens to enable it to be used throughout the year.

Construction will be 11 in. hollow brick walls, rendered externally, red pantile roof, reinforced concrete porch and aluminium casements and glazed doors; other doors will be flush. Floors will be of wood block on concrete, except in the kitchen, w.c. and bathroom, which will be finished in red asphalt. Concrete tiles will cover the terrace. A garage to the south-east of the bungalow, and connected to it on the building line by a pergola, will complete the scheme.



TOWN PLANNING INSTITUTE

Simplicity the Key to Good Village Design

A STRONG plea for a simple, uncomplicated approach to the design of the English village of the future was made by DR. THOMAS SHARP, M.A., P-P.T.P.I., when he addressed a meeting of the Town Planning Institute, held on April 7, at Caxton Hall, London.

Dr. Sharp, whose subject was "Village Design," began by describing in some detail the social characteristics of the English village which had strongly influenced or determined its physical appearance, and continued:—

Though I love villages and have lived in them for a good part of my life, I do not think I am sentimental about them: but they do, on the whole, seem to me to offer the best kind of home for those who have to live in the countryside or whose mode of life enables them to do so. And clearly we who are responsible for planning new additions to the multitude of villages up and down the country must know and respect their traditional forms if we are to do our work properly. But, more than that, I believe that the traditional form of the village is so good for its purpose that even our new villages should be based upon it. I can well imagine that there are people who may laugh at that for sentimentality, and would design a village as a single skyscraper of flats, or as a lot of little terraces, each four or five houses long, standing at right angles to a road, with windy spaces of communal gardens between. But though they might feel superior in having flung tradition aside, they would, in this instance, be wrong. I belive that the traditional form, and especially the squared form, is the most sensible (and not merely the most attractive) form that could be devised for a communal home in the country.

In my belief, the sense of enclosure is important in men's habitation everywhere. And I believe that it is doubly so in the country. Thus in my opinion, the enclosed form of the traditional village is still the form we should give even our new villages to-day.

While I am speaking of this matter of tradition in form, it may be desirable that I should go a little further and speak of the question of tradition in general. I hope that it is not necessary for me to explain at any great length that in demanding respect for well-tried traditions I am not for a moment suggesting that we should imitate the past and extend our present villages or build our new ones to resemble the old as much as possible. There is a world of difference between learning from the past and copying from it. While, for example, we can, in my opinion, learn much from a study of the plans of old villages that will enable us to establish principles as to how particular effects can be obtained by certain broad forms and by their interplay upon one another; and while further we may establish, as I think we can, that "free" planning will enable us to obtain something like true village character while a more rigid planning will certainly prevent our obtaining it and will give us something entirely different—while we can do these things, it would nevertheless be utterly mistaken of us to attempt (even if that were desirable, and to my mind it certainly is not) to create by conscious design the *detailed* effects of irregularity which have arisen out of the absence of conscious design. I do not, of course, suggest any such thing. On the contrary, I think that our new villages, and even our village extensions and in-fillings, while they should contain all the true village character that we can give them, should be straight-forward and honestly contemporary in their building forms.

Tradition Not Inviolate.

Where it is good to go even directly contrary to tradition for some well considered reason, I think we should do that also. Nowhere, except perhaps in wholly unified effects such as certain Cotswold villages, for example, should we allow ourselves to be over-intimidated by tradition. If the new buildings in an old village are simple and straightforward and if their materials show in their colour and texture a proper acknowledgment of those already existing, then I believe that, providing their plan form is good, they will sit happily among the older buildings and will contribute to the effect of the whole rather than detract from it.

Providing their plan form is good—that is the real crux of the matter. But somehow the appreciation of plan form seems to have died this last fifty years or more.

In all the additions to villages that have taken place during this century (concluded Dr. Sharp) I know of very few that are other than alien to the village they have been tacked on to. Even very good architects seem nowadays to have little or no understanding of the sympathetic site planning of buildings in association anywhere, but especially in a village. I think that it is partly because there is some curious inability to observe and accept the essential simplicity of village form: but it is also because we have become blinded (indeed I would go so far as to say corrupted) by suburban ideals arising from the garden city concept. As it is in the garden city, so it is in the garden village—the emphasis is all on the garden; and in the end city and village both become mere suburb: and a suburb, in the modern meaning of the word, has both an impure and a complicated form, whereas the real essence of the true village lies in its simplicity.

Discussion.

MR. T. ALWYN LLOYD said most of those present would agree with Dr. Sharp in the emphasis he had laid on the need for simplicity in village design. Planners had got so sophisticated and elaborate in their approach to planning that most of them found some difficulty in getting down to the "accidental" and informal approach. He (Mr. Alwyn Lloyd) was certain Dr. Sharp's approach was the right one.

Dr. Sharp had said he would deal only with the English village. The Welsh village was entirely different. One reason for the difference between English and Welsh villages was that Wales was ahead of England in land development. Instead of the smallholding, there was the co-operative farm in Wales. This was considered a great innovation and he was told the Government only gave consent to this method of development after having had very grave doubts. But it had proved very much simpler to handle from the planner's point of view because there were 20, 30 or even 100 cottages grouped together and the work was carried on away from the settlement itself.

He asked what Dr. Sharp would consider the right attitude to the extension of villages by building new houses, and what of the villages which had no character at all? Was it right to endeavour to start a new village, leaving the old one to crumble away, or take it as the nucleus it might be and gradually improve it to the required standard?

MR. G. LANGLEY-TAYLOR said he thought our national greatness had sprung from our love of the land and the village life of the countryside. He added that there was a danger of our forgetting that the most important part of village life was the character of the people in the village.

THE PRESIDENT (Mr. James W. R. Adams), referring to the question of dealing with the small-holding when planning villages, said that in Kent the Ministry of Agriculture had never put forward any solution of the problem in the hundreds of cases in which they had been consulted. They had confined themselves to saying "Yes" or "No." He did not think that was a satisfactory approach to the problem.

MR. E. H. DOUBLEDAY said that, like Dr. Sharp, they all loved villages but in planning them they were up against all sorts of things which tended to break the village down. He would like Dr. Sharp's views on the influences which planners had to cope with in controlling village design, including the fact that to-day they were faced with many individual ownerships of land and property, whereas in the past there had been single ownership. Many more people wanted to develop land in the country to-day, people who had no real interest in the village but who, nevertheless, could very well take the place of the old squire and such people who had left the village.

Another thing which they were up against was the breakdown of the craft of building among our village builders.

MR. T. F. THOMSON asked whether Dr. Sharp subscribed to the idea of discouraging the village of more than 300 or 400 people and concentrating future development in the countryside in small towns?

COL. W. S. CAMERON expressed the view that in the charming examples of villages which Dr. Sharp had shown on the screen were two factors which added very much to the charm of the villages. One was the presence of water and the other the contours.

Replying to the discussion, DR. SHARP said that after his experience in the Letcombe Bassett controversy he would be hesitant in moving a village which was reasonably satisfactory for social purposes, however lacking it might be in character. It was the duty of planners to obtain new villages of character but they should be extremely careful in suggesting the evacuation of old village sites.

On the question of the size of new villages he thought it was wrong to say, as some people did, that you could not get a community with anything under 1,000 population. He thought you could get a very good community spirit in a village of 350, and in a village of that size you could have the essential basic utility—the junior school. Referring to Mr. Doubleday's mention of the breakdown of village building craft, Dr. Sharp said one of the principal parts of his case was that building form was a secondary matter; the character of the village arose from the plan.

In answer to Mr. Thomson, he did not subscribe to the practice of discouraging the growth of tiny villages and putting their people into the near-by small towns. Planners must be very careful to avoid any kind of inhuman, rigid treatment of people, such as moving them about like cattle.

CORRESPONDENCE

[Whilst we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

Education of the Builder's Foreman.

TO THE EDITOR OF *The Builder*.

SIR,—I think that my Association would wish to thank you for your leading article on this subject, which is, indeed, opportune. We have always had the education and organisation of foremen very close to our heart, as is evidenced by the fact that my predecessor, Mr. E. J. Brown, with the full support of the L.M.B.A., was responsible for the formation in 1921 of the London Builders' Foremen's Association, which is closely allied with us, which we assist financially, and with which we have a joint committee.

More recently we strongly urged the need for a more active and realistic approach to the subject of training and, as a result, and with the co-operation of the Foremen's Association, the N.F.B.T.E. published their Report which has attracted attention all over the world. It was prominent in the recent I.L.O. discussions at Rome. More recently still, the L.M.B.A. urged the establishment of a Regional and National organisation of Foremen akin to and closely allied with the Employers' Federation. It was only last week that the Council of the N.F.B.T.E. accepted our recommendations and set up a special committee to examine the matter, to recommend a policy, and to report back to the Council.

Thus all that you suggest is already under way, and we are gratified to see your interest in this vital subject. I should emphasise, however, that, in the words of a past president of the N.F.B.T.E., "co-operation is not a one way street," and I appeal to all builders' foremen to realise that the interests of employers and their foremen are mutual and that with, and through, us they can make a great contribution towards the efficiency of our industry which is their responsibility as much as ours. The road which we should tread together is a clear one, and neither of us should be drawn into by-ways which may appear to offer immediate attractions, but which may well lead into *culs-de-sac* or worse, and which, in any event, will separate those who ought to be progressing side by side.

G. H. A. HUGHES.
Director, London Master Builders' Association.
47, Bedford-square, W.C.1.

Somerset House Repairs.

TO THE EDITOR OF *The Builder*.

SIR,—I feel sure the whole of the masonry industry appreciate and are indebted to you for your spirited remarks on the neglected stonework repairs at Somerset House (*The Builder*, April 1). Without such work as this being released, there is no opportunity to train a labour force to cope with the vast volume of work which must arise sooner or later if our cities are going to be rebuilt, leave alone additional new work now much overdue.

There seems to be a hesitancy to release work owing to the supposed shortage of masons. The nucleus of the old labour force remains, and many enterprising masonry contractors are augmenting these by apprenticeships and trainees in considerable numbers. Vast quantities of raw material are ready for use at the quarries. Once major jobs are released, it will compel the employment and augmentation of the present numbers of masons, a bottle-neck which will speedily be removed once the lead is given by the authorities, and thereby bring into being craftsmen whose skill—as you state—will be badly needed later on and without which London and cities in the provinces can never rise again to their pre-war architectural glory.

F. PARTRIDGE, Managing Director.
South Western Stone Co., Ltd.
Battersea, S.W.6.

Cost of Works and Licence-Free Limit.

TO THE EDITOR OF *The Builder*.

SIR,—The decision given in the Court of Appeal in the case of *Dennis and Company, Ltd.* v. *Nunn* [*The Builder*, April 8 last, p. 439] raises an important issue in relation to recovery of cost of works from the builder's point of view. In this district at least two local authorities have been in the habit since July of issuing licences for the total estimated cost of works less the £100 free limit, thus making their quota go further and leaving the builders to carry out part of the cost of the work under the margin of licence-free expenditure. From the ruling now upheld in the Court of Appeal this practice appears to be illegal and the sum which the local authorities have directed be spent from the licence-free margin irrecoverable at law.

The control of building is perhaps still a necessary evil, but surely it should be the duty of the Ministry of Works to see that the legal position is clarified so that positions such as this do not arise. It appears that proper directions to local authorities have been lacking.

D. CONWAY.
Managing Director,
Theo. Conway, Ltd.
Commercial-road.
Weymouth.

CIAM Summer School, 1949.

THERE are vacancies for some English post-graduate students at the International Summer School of Architecture which is being organised by the MARS Group on behalf of CIAM (Les Congres Internationaux d'Architecture Moderne). Applications should be sent as soon as possible to the Bursar, 34, Gordon-square, W.C.1, and should be accompanied by not more than three sheets of drawings. The closing date for applications is May 8. The school, which is under the direction of Mr. Maxwell Fry, assisted by Miss Jaqueline Tyrwhitt, will be held in London from August 8—September 3.

Building Employment Figures.

According to the latest figures published by the Ministry of Labour and National Service the numbers estimated to be employed in the building and contracting industries at the end of February show a fall of 3,000 from those at the end of January. Figures were:—January, 1949, 1,465,000; February, 1949, 1,462,000. These compare with 1,480,000 at the end of 1948 and 1,497,000 at mid-1948.

Appointments.

MR. L. M. BEATTIE, A.M.I.Mun.E., A.R.I.C.S., at present chief engineering assistant, Southwark Borough Council, has been appointed Deputy Borough Engineer and Surveyor.

MR. D. W. FOSTER, deputy Borough Engineer of Hindley (Yorks), has been appointed Borough Engineer of Blyth in succession to Mr. T. Wilson, who has been appointed Borough Engineer of Biggleswade.

Architectural Assistants' Salary Scales

R.I.B.A. COMMENTS

THE following note on Architectural Assistants' Salary Scales has been received from the R.I.B.A.:—

The suggestion of "Architectural Assistant" in his letter published in *The Builder* of April 8 that the Royal Institute of British Architects "has not seen fit to interest itself more in the financial status of its salaried members" is rather wide of the mark. Certainly for the last twenty-one years the R.I.B.A. has been unremitting in its efforts to improve the standing, both professional and financial, of salaried architects in all fields of practice. The Salaried Members' Committee was set up twenty-one years ago for this express purpose, and a scale of annual salaries was prepared by the Institute as long ago as May, 1930.

The Institute has made representations—either directly or through the representative body—to a great number of employing authorities with the express purpose of securing better remuneration and conditions of service for architects in their employment. It has negotiated, and is still in negotiation, with the National Joint Council for Local Authorities in regard to the application of their scales to architects in local government. Representations have been made direct to the National Coal Board and the British Railways Executive and to Government Departments through the official and authorised channel of the Institution of Professional Civil Servants. In addition, many individual industrial and commercial concerns have been approached, and that applies also to principals in private practice. In many cases the Institute's representations have been successful, and its recommendations accepted and put into operation. It may not be realised, however, that no matter how vigorous the representations, however just and necessary the recommendations may be, there is no power to enforce them. Very few comparable professional institutions have worked so strenuously as the Royal Institute for the promotion of the interests of the salaried member. That is not to say that the R.I.B.A. is satisfied; it is well aware that the remuneration of many salaried architects is inadequate.

The revision of the R.I.B.A. Scale of Salaries, which was last amended in June, 1945, is at present under consideration by the Salaried and Official Architects' Committee, as is also the extremely complex problem of how to implement the Institute's policy in regard to conditions of service. The Salaried and Official Architects' Committee is representative of every section of salaried architects, and any advice or constructive suggestions which salaried members may care to put forward will be welcomed by the Committee.

The following is a short extract from the section on Salaried and Official Practice which was published in the R.I.B.A. *Journal* of October last under the heading of "The Work of the R.I.B.A.":—

"It is a fact which is not always realised, or when realised reluctantly accepted, that the greater volume of the architectural work in the country is carried out by architects who are paid by salary, whether in a private office or a public department. They form the majority of the profession, and without them no office could function. It is the aim and responsibility of the Salaried and Official Architects' Committee to defend and promote their interests; its services are readily given to any member who seeks them."

DEVELOPMENT CHARGES IN PRACTICE

Some Salient Points of Interest

IMPORTANT points concerning Development Charges under the Town and Country Planning Act, 1947, were mentioned by MR. J. D. TRUSTRAM EVE, F.R.I.C.S., F.L.A.S., F.A.I., in the course of a paper read before a meeting of the Royal Institution of Chartered Surveyors, on April 4.

In that section of his paper dealing with "Development Charges in Practice," he said:—

It is impossible within the scope of this Paper to give an outline text book on such a vast subject as development charges. I propose therefore to confine myself to a few salient points that seem to be of importance.

1. *Freehold Interest.*—It must not be forgotten that in valuing for Part VII what is required is a valuation of the freehold interest, whatever the particular interest of the applicant for development charge determination may be. Where the developer has no more than a fairly short leasehold interest, safeguard against his having to bear a development charge greater than his interest can be obtained either by a contribution from the lessor or by limiting the application to the Board to the term of the lease.

2. *Procedure for Application.*—If you know you are exempt do not apply. If you think you are exempt send in a D.1 form and make use of Question 27 stating your grounds for exemption. If you are not exempt but it is obvious as a matter of valuation that the increase in value is nil and no development charge will be payable, it is necessary nevertheless to apply for determination on a D.1 form. The Board have promised to send a letter, within 14 days of the application reaching the Board, inviting discussion of the amount of the charge or asking for further particulars or saying the case is clearly complicated and cannot therefore be settled within the normal time. Except in complicated cases the District Valuer will issue his recommended figure within a month of application.

3. Normally payment of the charge is made by the applicant and a certificate of satisfaction issued by the Board before development starts. In order to ensure that development is likely to take place within 12 months, it would appear that the Board intend to issue their formal determination as the last administrative stroke (after first having given an informal determination) and may even wait until the development has actually started. This method would enable them to cancel their informal determination if development does not after all take place, for the Act does not provide for a cancellation of their formal determination. This, however, gives no security to the developer against increase in charges in the meantime.

4. *Unit of Application.*—In the light of the principles of valuation to be adopted by the Central Land Board as disclosed in their *Practice Notes*, the selection of the precise unit of application may no longer have great significance. I have advocated the selection of the smallest unit; indeed, in the case of an extension of existing development, a unit confined to the site of the actual buildings. This idea is not an attempt to get a lower determination of development charge than is proper; but to prevent the charge from being unjustly high. If the whole factory and the extension land were included as the unit of application there would be at least a temptation for the District Valuer to argue that not only had the extension land gone up in value, but so had the whole factory in view of the vital extension to be made. For instance, an increase in silo capacity might increase the capacity of a mill. If only the extension land is put in the application such argument could not be advanced without introducing the principle of "marriage" of sites.

5. It would, moreover, be carrying out, it seems to me, the provisions of the Act, for it is from the extension land that the development value has been removed by the Act and has been claimed for under Part VI; and it is the extension land on which the development value is to be replaced and paid for by the owner. Where it is required to set off against the increased value of the extension land any decrease in value of the existing development by reason of the new development, then it would be necessary to include the existing development within the unit of application. I interpret the *Practice Notes* however as reassuring as to the possible harmful effect of choosing a wrong unit of application, since the "before and after" process will only be used as a maximum, and reduced if another process yields lower results.

6. *Material Change in Use.*—Accompanying the General Development Amendment Order(1) is a valuable memorandum, (2) equivalent to a *Practice Note*, issued by the Ministry of Town and Country Planning, which contains amongst other useful explanations an indication of the interpretation that the Minister intends to place on the meaning of "material change."(3) Change in kind of use will always be "material," change in degree of use will depend on circumstances (e.g., a doctor's surgery in his house not "material" but letting off rooms for such use would be; a few paying guests not "material," lodgers to the extent of a lodging house business would be "material.")

7. *Payment.*—The Board at their discretion may fix payment "as a single capital sum, instalment of capital or of capital and interest combined, or as a series of other annual or periodical payments of such amount and payable at such times as the Board may determine."(4) This gives great elasticity and allows such devices as the non-payment of development charge on an agricultural cottage as long as it remains so used.(5) The Board prefer a single capital payment in order to avoid charging the property(6) as security for future payments but are prepared to consider representations by the developer.

8. *Variation of Charge.* — Once "determined" by the Board the charge can only be varied "having regard to any change of circumstances since the determination was made" but not "so as to increase the amount."(7) The determination ceases to have effect in the case of revocation of permission, an order under Section 26 for the removal of buildings or works, or the compulsory acquisition of the land : and may be varied if any of these have partial effect on the property. On transfer of interest in land or a new interest created otherwise than by process of law, after the determination of the charge and before the development is carried out or the use instituted, the Board may direct that the determination ceases to have effect.(8) It is important that contact with the Board should be made if any sale of an interest is contemplated before development is carried out whether before or after a development charge determination, so as to avoid any unwelcome surprise. The sale of mineral undertakings where development is a continuous process might at any time, it seems, invite a new determination of development charge. A figure recommended by the Valuation Department to the Board should not be confused with a formal determination (*see para.* 3).

9. *Partial Development Charge Application.*—It is clear that a development charge application cannot exceed the planning permission in area, time limit or quality. It is equally clear, and the Board confirm it,(9) that the application can be less than the planning permission and the Board are bound by the extent of the application. Thus (*a*) development charge application can be confined to five acres to build houses where planning permission has been obtained for ten acres; (*b*) development charge application can be confined to seven years for change from house to office use where planning permission is permanent for such change of use.

10. But what is not clear is whether what I call the quality of the planning permission can be tampered with by the application for development charge. For example, where a planning permission for use of land as a sports ground without limitation has been granted and the club that owns it is at present only to use it for club purposes and not charge for public entrance, is it binding on the Board to determine a development charge on the smaller basis if the application is confined to that? The Board are, it seems, in a difficulty over this principle because they have no opportunity to make a further charge where a change of use takes place within a use class(10) e.g., cinema to a theatre. I have chosen as my example a use which has not been given a class in the regulations and I suggest that a permission to use for admittance of the public to the sports ground on payment would not be infringed if the public is not in fact admitted, and that if later the public is admitted and it is held that a material change of use has taken place the Board would require a fresh application for an additional charge.(11) If the Act does not allow for this it should be amended to give the necessary elasticity of administration.

11. *Minerals.*—If the Board are bound by the time limit in the application, it may be difficult where there is no time limit in the application for the Board to fix a development charge for minerals on a royalty basis. The winning and working of minerals is the only development (except perhaps tipping) which is a continuous process and unless a time limit is set the development charge may get very much out of date; moreover, if arrived at on a royalty basis from an acreage market value basis for surface working, a time factor is an essential element in the calculation. It is possible that the Board are merely tied to the application period as a maximum and may therefore set a time limit lower than in the application even where the application is without limit. There is evidence that the Valuation Department are, where desired by the applicant, making the development charge determination correspond as closely as possible to actual leases. In so far as it is possible to relate the Consent and Refusal Values to actual surface market transactions per acre, it is vitally important, it seems to me, to see that the royalty development charge does not result in the developer paying more than he would on

an acreage basis. In the case of many surface minerals, anyhow in the South, evidence up to date seems to show an unexplained discrepancy between prices per acre and capitalised royalty payments under leases even allowing for risks and income tax deductions.

12. *Appointed Day Record of Property.*—Where development is at all likely to take place it seems a wise precaution to make a record of the cubic contents of buildings (including structures and erections) and of the use to which buildings and land were being put (or were entitled to be put, e.g., requisitioned land) on the Appointed Day. If curtilage in its two appearances in Section 112 (2) means at the Appointed Day this also should be recorded. The cubing code prepared jointly by the Royal Institute of British Architects and the R.I.C.S. and accepted by the Central Land Board is printed as an appendix to the *Practice Notes*.[13] It may be of some value to practitioners as it will save thinking, at any rate in ordinary cases. It is not binding in law and therefore owners need not apply it in circumstances where it would be materially to their disadvantage to do so.

13. *Use of Tolerance.*—Under Section 112 (2) the ten per cent. tolerance of the cubic content of buildings may be aggregated within a curtilage in so far as they are used as one unit for the purposes of any institution or undertaking. In such cases, where it is in doubt whether a new building is within the curtilage or its use will be as one unit for the purpose of any institution or undertaking, care should be taken to see that the side on which the applicant argues is in his interest. The first thought would be to argue that the building falls within Section 112 (2) and would be exempt so far as its size keeps it within the ten per cent. tolerance. But if the particular building is likely to attract a low development charge in relation to its cubic content by reason of its position or nature, and there is a prospect of taking up the tolerance by further development which would for similar reasons attract a more expensive development charge in relation to its cubic content, it would pay the applicant not to claim tolerance exemption for the immediate development.

14. Under what circumstances are dwelling-houses used as one unit for the purposes of any institution or undertaking within Section 112 (2)? It depends, I suggest, on the institution or undertaking (e.g. a lunatic asylum must house some attendants within its curtilage) and on its position (e.g. an industrial undertaking in an isolated position may require to house its key workers at the works, but not if in an urban situation). If "curtilage" is to be as at the date of application for determination of development charge, a fine traffic in curtilage extensions and tolerances can be foretold.

15. It is useful to note that Section 112 (2) is to be applied by the Board[12] to all classes of property, except dwelling-houses for which special provisions are made under the Development Charge Exemptions Regulations.[14] Further the Board will apply[15] this subsection to the rebuilding of a building under paragraph 1 of the Third Schedule as well as to the extension of a building under paragraph 3 (the subsection mentions only paragraph 3). The effect of this will be that, on the rebuilding after destruction of any buildings within the curtilage and fulfilling the terms of this subsection, the old aggregate cubic contents may be used for building any buildings of any construction or shape anywhere within the curtilage irrespective of the construction, shape or position of the old buildings, though their use must continue to be as before or within the same use class otherwise a development charge may be attracted.

16. *Charities.*[16]—Land held and used on the Appointed Day for charitable purposes and ceasing to be so used is free from development charges for any development by which the use is made to correspond with that which prevails generally in the case of contiguous or adjacent land, if planning permission for it has been granted before the land ceases to be charitable land. (A similar provision applies to statutory undertaking land.) If such land is likely to be developed for other than charitable purposes and the development on contiguous or adjacent land is not sufficient to cover the likely development (which will frequently be so in rural areas) care should be taken to see whether there are grounds for claiming that the land was not on the Appointed Day being "used in any manner for or in connection with the purposes" of the charity so that a Part VI claim might be made. For a similar reason it is important to examine each case of application to the Minister for a certificate that land held but not used for charitable purposes on the Appointed Day should be so treated. On later change of policy absence of a Part VI claim may cause financial loss to the charity.

REFERENCES.

(1) The Town and Country Planning (General Development) Amendment Order, 1949. S.I. 1949, No. 195.
(2) Ministry of Town and Country Planning Circular, No. 67.
(3) 1947 Act, Section 12.
(4) Section 71 (1).
(5) D.I.B. and App. C. of *Practice Notes* (First Series).
(6) Section 71 (1) and (2).
(7) Section 73 (1).
(8) Section 72 (1).
(9) *C.L.B. Practice Notes* (First Series), paras. 108 and 122.
(10) S.I. 1948, No. 955.
(11) *C.L.B. Practice Notes* (First Series), para. 108.
(12) *C.L.B. Practice Notes* (First Series), App. A., p. 37.
(13) *C.L.B. Practice Notes* (First Series), para. 20.
(14) S.I. 1948, No. 1188.
(15) *C.L.B. Practice Notes* (First Series), para 20.
(16) 1947 Act, Section 85.

INQUIRY BUREAU

Damp Flank Wall

Q.—I converted a stable building into a house about 18 months ago. The flank wall, with west aspect, is 9-in. stock brickwork built in lime mortar, about 70 years old, and the mortar is very weak. The top few courses of the wall were found to be in a very bad state when the conversion was done, due to a leaking box gutter, and were rebuilt. The mortar joints were raked out externally and pointed in a medium strength mortar, and the wall given two good coats of proprietary preparation externally. Internally the walls were partly replastered, but some old plaster, which was in a hard cement-sand mix, was left. Although the house has been inhabited for a year, this wall still shows internal damp patches in humid conditions, particularly where the old plaster has been left, and the rooms adjoining the wall feel "cold."

I am proposing to line the wall internally with 1-in. wood wool slabs, fixed direct over existing plaster, and finished with a skim coat of lime plaster. I wish to inquire if there seems to be any possibility of trouble arising through internal sweating of the wall between the wood wool slabs and existing plaster face. I am fairly satisfied that there is no direct penetration of external moisture, as the wall is in a protected position, but I have been considering the advisability of rendering the wall externally and finishing in calcined spar. The wall has had a dampcourse inserted and there is no question of rising damp. I should very much appreciate your advice. G. P. T.

A.—I suggest that, owing to the age of the building and particularly of the flank wall indicated, it is reasonable to assume that the wall was more or less saturated by reason of the faulty box gutter and probably an inadequate dampcourse. The reason presumably for the Portland cement-and-sand rendering was to help to keep back the dampness, a process which in point of fact internally is not much good unless a waterproofer is incorporated in the rendering. When this class of rendering is executed in this particular mortar, it is usual to finish the face with a steel trowel to close the pores and to stop the dampness from penetrating to the face. But I suggest that it is most probable that this form of rendering will attract humidity and lead to condensation, which in turn could make the patches appear damp. On the other hand, if no waterproofer was incorporated, the dampness may still be getting through. The fact that the walls of the room adjoining feel cold is probably due to apparent dampness still in this particular wall.

I am not in favour of the proposal to fix wood wool slabs direct on to the wall, but would suggest an alternative, e.g., that the walls be thoroughly cleaned down and two coats of bitumen paint be applied; then plug the walls and fix 2-in. by 1-in. wood battens at 18-in. centres, with cross battens to take the joints of fibre boards. These battens should be treated with two coats of wood preservative.

Then fix a fibre wood board of ¼-in. or ⅛-in. thick quality, painting the back with two coats of good oil colour before fixing. The fibre board should be fixed with non-ferrous nails, and the face of the fibre board finished with plaster recommended by the makers. When dry, decoration can be done.

With reference to the external treatment of the walls, it may be necessary to remove the proprietary compound, rake out the joints and rough hack the brickwork for adhesion. Render in two coats Portland cement and washed sand; mix 3 to 1, and incorporate a good waterproofer in each coat. The second coat should be slightly scratched to form a key for the finish in calcined spar. The dampcourse should remain exposed and on no account be covered with the rendering. G. W. H.

Copyright of Architeet's Designs

Q.—(1) Are designs and specifications, prepared and deposited by an architect with official bodies to accompany applications for licences or consents, the copyright of their author until they are paid for by the client?

(2) Are official bodies entitled to divulge the contents of such designs and specifications to another architect for his use without the knowledge or consent of their author? F. R. I.

A.—The situation in brief in this: The *property* in the plans passes to the building owner when he has paid the architect, but the *copyright* in the plans remains with the architect unless he has

surrendered it under some term of his contract with the building owner, or has assigned the copyright in writing to the building owner. This is the position in regard to the building owner and an independent architect. But if the architect be a paid servant of some body, e.g., a local authority, then, subject to any contractual arrangement to the contrary, copyright in the architect's plans will belong to the body employing him. (See Copyright Act, 1911.)

In regard to the two questions submitted, then:

(1) The above note explains the position; and

(2) In no case would official bodies be "*entitled* to divulge contents of such designs, etc." It would appear that if they did so, they would lay themselves open to an action. I am quite aware of the difficulty in proving (and assessing) the amount of damages; much would depend upon the circumstances in a particular case.

See Meikle and others *v.* Maufe and others [1941]. All E.R. 144.

N. P. G.

Worm-Eaten Floor Joists

Q.—I have recently found that the joists and beams supporting the floor of one of my downstairs rooms is being attacked by wood worm. The underside of this floor is fairly accessible from a door in the cellar, there being a space of from 3 to 4 feet under the floor. I have been advised to treat the affected part by painting with creosote and as this represents a fairly large job, I should be glad of your opinion as to whether this treatment will arrest the trouble and effect a lasting cure. Is there any simple method of fumigation which might help? At present the floor seems reasonably sound and naturally I do not want the trouble to go any further. A. G. M.

A.—With reference to the use of creosote, it is more effective if the timber is impregnated under pressure, and this operation can only be carried out before the timber is used in construction. Preservatives, to be effective, must penetrate the surface of the timber for some distance. If it is possible, the worm-eaten wood should be removed. Failing this, the wood can be treated with chemical compounds or solutions. Two booklets, "Timber Pests," and "Timber Preservation," published by the Timber Development Association, Ltd., 75, Cannon-street, London, E.C.4, include up-to-date lists of preservatives. G. W. H.

[The names of manufacturers of chemical compounds for the treatment of timber have been forwarded.—ED.]

Leaking Hot Water Tank

Q.—Can you help me with the following difficulty? About three years ago I installed a new hot-water tank, removing it from the linen cupboard in a bedroom to the kitchen, at the same time fitting an immersion heater, and in consequence lagging the tank. A few days ago the tank began to leak, and upon examination I find there is a rust patch on the bottom. Is it likely that this wear has been hastened by the greater heat to which the tank has been subjected due to it being very near the kitchen boiler and being well lagged? If so, I do not wish to instal another in the same position and shall revert to the linen cupboard. I have always understood that the water supply in this district is considered hard, but I have never yet experienced such rapid failure of a tank, though I have heard of such a possibility. J. J. W.

A.—The trouble referred to is probably due to some form of electrolytic action. It can be caused by particles of rust from iron pipes in contact with the zinc coating of the hot storage tank. Neither the removal of the tank from its old position to the new, nor the extra heat due to the lagging, could produce the trouble indicated. The effect on the zinc coating may be partly electrolytic and partly due to scouring owing to the circulatory movement of the water. I think that copper circulating pipes and a copper cylinder might overcome the difficulty. G. W. H.

MATERIALS CONTROLS

A Ministry of Health Circular

A CIRCULAR (28/49) has been issued to Housing Authorities by the Ministry of Health dealing with the following matters: Removal of hardwood timber from licensing control; use of hardwood timber for gates, gate posts and close boarded fencing, joinery and floor blocks, other floor coverings for solid floors, removal from control of building boards, lapsed building licences, and check on timber acquired.

HARDWOOD TIMBER.—Attention is drawn to the statement made by the President of the Board of Trade in the House of Commons on March 22, and the consequent withdrawal from licensing control of hardwood timber, home-grown or imported (with the limited exceptions set out in Appendix A to this circular). It is anticipated that supplies of hardwood timber will be adequate to provide for close boarded fencing, where required, in addition to extended manufactures of hardwood flooring blocks and hardwood joinery items. The following notes indicate certain possible modifications of existing housebuilding methods capable of use in an effort to encourage the use of hardwood timber, now to be freely available, in substitution for softwood.

GATES, GATE POSTS AND FENCING.—Home-grown hardwood, not of first quality, if suitably treated with preservatives, should provide a satisfactory alternative for reinforced concrete posts and might possibly also be cheaper. Supplies of first quality hardwood (suitable for the manufacture of joinery items) may not be available in sufficient quantities to provide also for fencing, and the Minister is sure that local authorities in considering proposals for providing such fencing for properties owned by them will bear this in mind and will use second quality home-grown hardwood wherever possible.

HARDWOOD FOR CERTAIN JOINERY ITEMS.—Doors, staircase assemblies and other joinery items are now being manufactured from certain species of imported hardwood (some of which have not hitherto been widely used in this country) and are available through the normal trade channels. In view of the continued need for economy in the use of softwood timber, consideration should be given to the wider use by local authorities of hardwood joinery items in the construction of new houses, and every encouragement given to their use by private builders erecting houses under licence. The use of hardwood timber for the manufacture of kitchen fitments should not normally involve additional cost, and may therefore be of particular interest to local authorities in connection with their own housing schemes.

A builder, or prospective building owner, who asks about the effect on the softwood allowance of using hardwood timber for joinery items, should be told that not more than one-half of the savings to be effected need be deducted from the normal allowance of softwood on the scale of 1.6 standards for a house of 1,000 superficial feet. It will be appreciated that part of the saving in softwood secured by the use of hardwood joinery will, therefore, be available for use in the construction of houses.

WOOD BLOCK FLOORS.—Softwood timber for the manufacture of wood blocks will continue to be restricted to slabs and offcuts or second-hand timber under the arrangements set out in Circular 79/47, but manufacturers of hardwood blocks for use in surfacing floors in many types of premises, including both new and existing houses, will now be able to obtain adequate supplies of suitable qualities of home-grown and imported hardwood without the need for a licence. The price of this type of floor covering may be relatively high, but its use may ease the demand on other varieties of floor covering more commonly used in local authority housing schemes and so assist indirectly in avoiding delays in finishing houses.

OTHER VARIETIES OF FLOOR COVERINGS FOR SOLID GROUND FLOORS.—Details were given of the characteristics and estimated prices of various forms of floor coverings in Circular 79/47. In Appendix B to this circular some revised estimates are now quoted of the cost of the principal forms of flooring materials at present on the market, together with some remarks concerning laying. In each case the prices quoted relate to the inclusive costs of building a solid ground floor from the cleared earth and assuming the site is a level one and needs no hardcore or filling.

Costs and characteristics of suspended timber ground floors and linoleum are both included in the schedule for purposes of comparison only. Such floors should not be provided. Linoleum is not as yet available as a permanent floor covering in new houses.

Local authorities will no doubt have observed that under the Purchase Tax (No. 3) Order, 1948, exemption from this tax was granted as from November 15, 1948, to: "Floor coverings in the form of tiles or strips not exceeding 450 sq. in. in area, irrespective of shape," and this relaxation has been taken into account when calculating the prices which appear in the Appendix.

A full study of floor coverings has been made by the Building Research Station and it is expected that the report on this subject will shortly be published. In the meantime it should be noted that supplies of the basic raw material for pitchmastic floors will continue to be inadequate to meet the full demand, and local authorities who would wish to specify coloured pitchmastic will in many cases, therefore, continue to find it necessary to consider alternative flooring materials.

As will be seen from the details now given, a number of alternative materials are readily available at somewhat similar costs and there should be no difficulty in securing one or other of them, so long as arrangements are made at an early stage.

BUILDING BOARDS (INSULATION BOARD, HARDBOARD AND LAMINATED BUILDING BOARD).—All remaining restrictions on the acquisition and use of building board were removed on March 5, 1949. Local authorities will, therefore, no longer be required to certify B.M.S.H. forms for

hardboard or laminated building board or to forward to the Ministry's Regional Offices returns of the quantities certified by them. It will be remembered that controls affecting the acquisition and use of insulation board were removed in July, 1948 (see M.O.H. Circular 136/48).

LAPSED BUILDING LICENCES FOR ERECTION OF NEW HOUSES.—As local authorities are aware, licences to acquire timber are issued, without separate application, on receipt by the Principal Housing Officer of the duplicate building licence. The number of lapsed licences is reported by local authorities in Section 6 (B) of Housing Progress Report (P.2) but it will assist Principal Housing Officers to guard against misappropriation of timber if local authorities will send them a brief notification each month (in addition to the record on form P.2) of lapsed licences, giving date of issue of licence, name and address of licence holder and details of the site on which the house was to have been built.

APPENDIX A

The types of hardwood timber subject to licensing control are : Ash, basswood, hickory, Honduras mahogany, rock maple, teak decks, Canadian and American birch, American poplar and American cypress. The above types of hardwood are not normally used in house construction or for joinery items. Licences for their acquisition will not therefore be issued.

APPENDIX B

The following price ranges per yd. super (based on conditions ruling in November, 1948) are those which might be expected by a local authority in open tender for 50-house contracts. In all cases where the material itself is not an adequate damp-resisting barrier the cost of a d.p.c. has been included. Where the material itself is not affected by moisture, although it may permit the passage of moisture through itself or through joints, it is recommended that a d.p.c. should be incorporated in case linoleum or carpets may be laid over the floor. In the case of these materials, on dry sites, it may sometimes be considered safe to omit the damp course. If this is done the price will be some 2s. to 5s. less per sq. yd.

N.B.—It should be noted that the prices quoted cover for all materials, labour, overheads and profit involved in building up the ground floor from the cleared earth, assuming a level site and that no hardcore or filling is necessary.

MASTIC ASPHALT (BLACK).—½ in. min. Mastic asphalt to B.S., 10/6 laid on 4 in. concrete—18s. 4d. to 19s. 4d.

COLOURED MASTIC ASPHALT.—½ in. min. Coloured mastic asphalt flooring to B.S. 1451, laid on sheathing felt on 4 in. concrete—22s. 11d. to 26s. 4d.

RESIN TILES ("ASPHALT" TILES).—"Asphalt" flooring tiles laid with adhesive on concrete sub-floor, consisting of 3 in. base concrete and damp-proof membrane, with 2 in. concrete (trowel finished) over membrane—¼ in. thick, 23s. 5d. to 40s. 3d., depending on colour ; 3/16 in. thick, 27s. 8d. to 41s. 6d., depending on colour.

COATED BITUMEN FELT (NOT FELT BASE LINO. PRINTED OR PAINTED).—2 m/m. coated bitumen felt (not printed or painted), laid with adhesive on concrete sub-floor consisting of 3 in. base concrete and damp-proof membrane with 2 in. (trowel finished) over membrane—17s. 6d. to 18s. 7d., including 1s. Purchase Tax.

CEMENT-BITUMEN.—¼ in. min. Cement-bitumen flooring laid on concrete sub-floor, consisting of 3 in. base concrete and damp-proof membrane, with 2 in. concrete over membrane (see draft Code of Practice 204.106)—24s. 11d. to 27s.

CEMENT-RUBBER LATEX.—¼ in. min. Cement-rubber latex flooring laid on concrete sub-floor, consisting of 3 in. base concrete and damp-proof membrane, with 2 in. concrete over membrane (see draft Code of Practice 204.105)—25s. 5d. to 27s. 6d.

CEMENT-POLYVINYL ACETATE.—¼ in. min. Cement-polyvinyl acetate flooring laid on concrete sub-floor consisting of 3 in. base concrete and damp-proof membrane, with 2 in. concrete over membrane—29s. 5d. to 31s. 5d.

CEMENT-SAWDUST.—¼ in. min. Sawdust-cement flooring laid on concrete sub-floor, consisting of 3 in. base concrete and damp-proof membrane with 2 in. concrete over membrane (as covered by Building Research Station Patent)—21s. 2d. to 23s. 3d.

CLAY TILES.—¼ in. to 1¼ in. clay (Quarry) tiles to B.S. 1286, laid in cement morjar on concrete sub-floor consisting of 3 in. base concrete and damp-proof membrane with 2 in. concrete (trowel finished) over membrane—24s. 3d. to 26s. 4d.

COMPOSITION BLOCK.—¼ in. Composition block laid in cement mortar on concrete sub-floor, consisting of 3 in. base concrete and damp-proof membrane with 2 in. concrete over membrane (see Draft Code of Practice 2.134)—41s. 8d. to 43s. 9d.

CONCRETE TILES.—¼ in., ⅜ in., ½ in. Concrete flooring tiles laid to B.S. 1197, laid in cement mortar on concrete sub-floor, consisting of 3 in. base concrete and damp-proof membrane with 2 in. concrete (trowel finish), over membrane—28s. 1d. to 36s.

CORK TILES.—9/16 in., ¾ in. and 1 in. Cork tiles, laid with adhesive on concrete sub-floor, consisting of 3 in. base concrete and damp-proof membrane with 2 in. concrete (trowel finish) over membrane—47s. 2d. to 56s. 9d.

GRANOLITHIC CONCRETE.—½ in. min. on new concrete and 1½ in. on old. Granolothic concrete on concrete on concrete sub-floor, consisting of 3 in. base concrete and damp-proof membrane with 2 in. concrete over membrane (see draft Code of Practice)—13s. 8d. to 22s. 9d.

LINOLEUM.—1.9 to 6.7 m/m. linoleum laid to B.S. 810 with adhesive on concrete sub-floor, consisting of 3 in. base concrete with damp-proof membrane, with 2 in. concrete (trowel finish) over membrane—24s. to 44s. 3d.

MAGNESIUM OXYCHLORIDE.—½ in. min. Magnesium Oxychloride jointless flooring laid on concrete sub-floor, consisting of 3 in, base concrete and damp-proof membrane with 2 in. concrete over membrane (see Code of Practice for laying composition magnesite flooring and dadoes) (B.I.N.C. 1938. B.S. draft sub-Code 204 107 B.S. 766)—26s. 5d. to 30s. 6d.

COLOURED PITCH MASTIC.—¼ in. min. Coloured pitch mastic flooring to B.S. 1375, laid on 4 in. concrete—22s. to 23s.

RUBBER SHEET AND TILES.—Rubber sheet and tile ⅛ in. and 3/16 in., laid with adhesive on concrete and damp-proof membrane with 2 in. concrete (trowel finish) over membrane (see Code of Practice) —¼ in. thick, 30s. to 34s. ; 3/16 in. thick, 36s. 5d. to 38s. 6d. (including Purchase Tax on sheet).

TERRAZZO.—½ in. to ¾ in. min. Terrazzo flooring, laid on concrete sub-floor consisting of 3 in. base concrete and damp-proof membrane, with 2 in. concrete over membrane—32s. to 39s.

TERRAZZO TILES.—½ in., ⅝ in. and ¾ in. Terrazzo flooring tiles laid in cement mortar on concrete sub-floor, consisting of 3 in. base concrete and damp-proof membrane with 2in. concrete (trowel finish) over membrane—from 32s. 2d.

SUSPENDED TIMBER SOFTWOOD BOARDS.—1 in. nom. t. and g. softwood flooring, laid on wood joists and plates, sleeper walls and 3 in. oversite concrete—25s. to 30s.

SOFTWOOD TIMBER BOARDING ON CONCRETE.—⅝ in. nom. t. and g. softwood boarding on wood fillets in metal clips in 4 in. spade finished base concrete, hot applied bitumen on concrete surface—19s. 9d. to 23s. 9d.

SOFTWOOD BLOCKS ON CONCRETE.—Softwood block (⅝ in. finished thickness) laid in hot bitumen on 4 in. concrete (levelled and trowel finish)—29s. 6d. to 32s. 9d.

HARDWOOD STRIP ON CONCRETE.—⅝ in. nom. t. and g. hardwood boarding on wood fillets in metal clips in 4 in. spade finished base concrete, hot bitumen applied on concrete surface—43s. 3d. to 64s. 9d., depending on species of hardwood.

HARDWOOD BLOCKS ON CONCRETE.—Hardwood block (⅝ in. finished thickness) laid in hot bitumen on 4 in. concrete (levelled and trowel finish)—from 43s.

BOOKS RECEIVED

TOWN AND COUNTRY PLANNING LAW. Second Edition. By J. Kekwick and Robert S. W. Pollard. London: Stevens and Sons, Ltd.) Price 4s.

PALMER'S PRIVATE COMPANIES. By J. Charlesworth. (London: Stevens and Sons, Ltd.) Price 3s.

QUESTIONS AND ANSWERS ON GAS FITTING. By H. A. Blum. (London: George Newnes, Ltd.) Price 5s.

DEVELOPMENT AND RENT CONTROL. (London: The Dawn Press.) Price 1s.

THE HOUSE FOR YOU. By C. and H. Sleeper. (London: Chapman and Hall.) Price 30s.

BUILDING SOCIETIES. (London: The Building Societies Association.) Price 6d.

QUESTIONS AND ANSWERS ON JOINERY. By A. E. Bridgwood. (London: George Newnes, Ltd.) Price 5s.

BUILDINGS AND PROSPECTS. By John Piper. (London: The Architectural Press.) Price 18s.

THE ROOFING READY RECKONER. By Ralph Goss. (London: Crosby Lockwood and Son, Ltd.) Price 6s.

GRAINING AND MARBLING. By J. P. Parry. (London: Crosby Lockwood and Son, Ltd.) Price 18s.

USE OF LIGHT-WEIGHT CONCRETES

Fire-Resisting Applications in Buildings

SOME of the advantages and uses of light-weight concretes were mentioned by MR. ANTHONY POTT, A.R.I.B.A., of the Building Research Station, D.S.I.R., when he read a paper* on "Recent Developments in Permanent Building Construction" before a meeting of the Royal Institution of Chartered Surveyors on March 23. He said:—

I would mention one group of materials, lightweight concretes, which I think are going to be much more widely used in the future than they have been in the past on account of their thermal properties. They are not "new" materials, but except in the common and much distrusted clinker concrete (partition) block they have not been widely used in this country. This is not so in other countries such as Sweden and the U.S.A., where they are well-established building materials and are used in large quantities. Broadly speaking, any concrete weighing less than 120-lb./cu. ft. can be described as lightweight, but the usual range is between 50- and 90-lb./cu. ft. They fall into two classes: those made from aggregates which are themselves light and those consisting of a cement mortar of a cellular structure which is obtained by chemical or physical means during manufacture. The lightweight aggregates are either natural materials, by-products of other processes, or manufactured aggregates. In this country, the best-known examples of these types are pumice, furnace clinker and foamed slag, respectively. The properties of lightweight concretes vary with the materials and processes used; and considerable variation is also found within any single type depending on the density of the material, which is largely determined by the mix used. Thus, with foamed slag concrete the compressive strength (at 28 days) may range from about 4,500-lb./sq. in. with a 1 : 1 : 2 mix (density 114-lb./cu. ft.) to about 250-lb./sq. in. with a 1 : 6 : 12 mix (density 70-lb./cu. ft.); and the thermal conductivity from 1.0 B.Th.U./hr./sq. ft./in./°F. at 41-lb./cu. ft. to 2.2 B.Th.U./hr./sq. ft./in./°F., at about 80-lb./cu. ft. The advantageous properties of lightweight concrete are relatively low thermal conductivity (that is, they are good heat insulators), that they are easily cut, they can be nailed into, they are a good base for plastering and their behaviour in fire is slightly better than that of dense concrete. Against these advantages, lightweight concretes have two disadvantages: lower strengths and rather larger moisture movements than, say, dense concrete. But there are many purposes for which great strength is not necessary, and it is in application to these that lightweight concretes can be used with the benefit of their other properties. For instance, the most economical method of improving the insulation of the walls of the ordinary small house is by replacing the brick inner skin of an 11-in. cavity wall with one of lightweight concrete chosen for its combination of adequate strength with low thermal conductivity. Strength is of still less significance in the design of panel infilling for framed buildings, and here the lightness of the material is itself an advantage in reducing dead load. In a recent number of an American paper there was reported the extensive use of lightweight concretes (of

* By permission of the Director of Building Research.

the light aggregate type) in two large office buildings: and it was stated that in each of these the very large reduction in the dead loads had resulted in a saving of over 1,000 tons of steel.

In these office buildings the steel frames were encased in vermiculite plaster, 2 in. thick, gummed on to expanded metal fixed to the steelwork. This one feature contributed a substantial saving in dead-weight, and is a good example of how a relatively new material and advances in knowledge—of fire-hazard in this case—may combine to produce new kinds of construction. Vermiculite is a mica-like mineral which is found mainly in the U.S.A. and in South Africa. It has the characteristic of exfoliating when heated to produce a very light material weighing only a few pounds a cubic foot. In the U.S.A., it has been used as an aggregate for lightweight concrete, as loose insulation and in special acoustic plasters: so far as I know, the last of these is the only application to which it has been put in this country in the past, but recent notices in the technical Press suggest that developments which are going on at present may lead to its wider use in the future. There is little, if any, experience of vermiculite as an aggregate for concrete in this country, but it is clear from American sources that very lightweight concrete can be produced (from 20—60-lb./cu. ft.) with good thermal insulating properties (conductivity about 1.0 B.Th.U./etc.). It seems probable that the behaviour of vermiculite concrete in fire-resistance tests would be at least as good as that of other lightweight concretes. The apparent disadvantages are the low strength, which may well restrict its use to non-load-bearing elements, and the high cost of the aggregate; and there are a number of important properties, such as moisture movement and permeability, on which more information is necessary before a complete assessment can be made.

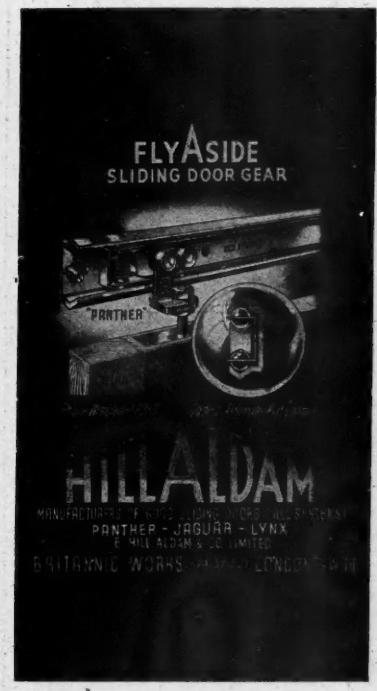
The main function of the vermiculite plaster encasement to the steel members in these American buildings is, of course, to increase the fire-resistance of the elements of the structure. Here I would like to draw attention to the work on Fire Grading of Buildings of the Joint Committee of the Building Research Board and the Fire Offices' Committee. Part I of the committee's report has been published as No. 20 of the Post-War Building Studies. It deals with general principles and structural precautions, and is to be followed by parts dealing with fire-fighting equipment in buildings, means of escape and chimneys and flues. The problems of the protection of buildings and their occupants against fire are very complex and can be approached in many ways. Until recently, the way has been a rough-and-ready one, as is shown by the fact that building regulations have tended to lay down a single standard of fire-resistance in the form of a minimum thickness for walls or encasement, and so on, applicable to a wide range of buildings irrespective of the varying fire hazards involved. This is not unexpected if you are told, as I was recently by a man who is an expert in the subject, that the bye-laws concerned with structural fire precautions were based on the London Building Act of 1666 up to 1936. It seems to me that the Fire Grading Committee's work is of great value, because it has put the whole problem on a rational basis. For example, the committee suggests the grading of occupancies according to what is termed the "damage hazard," as measured by the fire load, and the grading of building constructions according to the fire resistance of their elements. These two, the fire load and the fire-resistance, can be inter-related to determine the type of construction which is appropriate to a particular building in a way analogous to that in which loads and the properties of materials form the basis of a structural design. This analogy must not be taken too exactly, for at present the quantitative data on the severity of fires in buildings are limited and the fire-resistance of elements of structures has only been methodically studied for 10 or 15 years. Moreover, other factors, such as the size of the building and its sub-division, enter into even this single aspect of fire hazard. But I think that this example typifies a new approach to the whole problem of fire-precaution in buildings which, in the future, will have a big effect on many forms of building.

PIG LEAD PRICES

Supply Position Easier

THE Lead Industries' Development Council, commenting on the Ministry of Supply decision to reduce the price of virgin pig lead to £106 per ton, say that there is now a much easier supply position for lead sheet and pipe, and that consumers—especially builders and plumbers—should have no trouble in obtaining supplies at prices considerably below what they have been paying.

After a long rise in world prices, states the Council, virgin pig lead has fallen from its peak, and the U.S.A. price is now approximately the equivalent of £90 per ton. In Britain since 1939, when lead was £14 12s. 6d. per ton, prices went up swiftly and reached £90 per ton on September 1, 1948, £111 on October 1, and reached their peak on January 1, 1949, when the Ministry of Supply fixed the price at £123 per ton. The fall in price is not due to increased production, but to reduced consumption caused by high prices. An increased demand might very easily steady the market, adds the Council.



IN PARLIAMENT

Village Halls.

MR. SILKIN, in reply to Mr. Philips Price, said that development charge was payable in respect of any enlargement in excess of 10 per cent. of the cubic content of buildings used as village halls and institutes. The amount of the charge would depend on the location of the premises and in some cases might be *nil*.

Regional Hospital Board Architects.

MR. BEVAN, replying to Mr. Granville Sharp, said that 12 Regional Hospital Boards had appointed full-time architects. Of the remaining two, neither had yet invited applications for such appointments. The Regional Boards were responsible for all capital works of construction, reconstruction and adaptation at non-teaching hospitals, and also for the supervision of major schemes of building maintenance. The majority had found that this necessitated the employment of full-time professional officers. The work of the regional architect might be both advisory and executive and included the handling of proposals designed to meet needs made known to the Boards by Hospital Management Committees.

Homes for the Aged.

MR. S. SHEPHARD asked the Minister of Town and Country Planning if he would exempt from development charges land acquired or to be acquired by charitable organisations for the purpose of building homes for the aged.

MR. KING said that a charity holding land on July 1, 1948, for the purpose of building homes for the aged could secure exemption from charge under Section 85(5) of the Act. Land purchased after that date for that purpose should be acquired at existing use value, and with development charge should cost no more than it would have done had the Act not been passed.

Service Builders.

MR. KEY, in answer to Mr. Emrys Hughes, said it was estimated that at the end of January, 1949, approximately 27,500 building and civil engineering workers were employed on work for the Service Departments.

Factory Sites.

MR. J. EDWARDS, replying to Mr. Skinnard, said that since the end of the war some hundreds of London firms had made preliminary inquiries about prospects in the new towns. Four firms had received licences to build factories in these towns. Another eight firms had applied for Industrial Development Certificates under the Town and Country Planing Act. Three certificates had been issued and the other applications were now under consideration. These 12 firms at present employed approximately 1,900 people in the Greater London Area and they expected to employ about 2,500 in their new factories. It was expected that a substantial number of the present employees would follow their employers to the new towns.

Leaflets of Advice.

MR. SKINNARD asked the Minister of Town and Country Planning what leaflets of advice or instruction issued by his department were available to people who were contemplating buying plots of land for building purposes; what the reference numbers of such leaflets were and where they might be obtained.

Mr. King said that the following was a list of leaflets which had been issued in this connection by his Department and the Central Land Board:—

(1) The Town and Country Planning Act, 1947. Notes for the guidance of buyers and sellers of land for development purposes in the period between the passing of the Act and the Appointed Day.
(2) P.R.2. The Town and Country Planning Act, 1947—Its effect on private developers and landowners.
(3) P.R.3. The Town and Country Planning Act, 1947—Claims for exemption from Development Charge by owners of land ripe for development.
(4) P.R.4. The Town and Country Planning Act, 1947—Land held for charitable purposes.

All these leaflets were free and could be got from the Ministry.

The Central Land Board had issued leaflets entitled:—

(1) House 1. Advice on buying and selling a site for building a house.
(2) House 2. Payments and Development Charges on single house plots owned on or before July 1, 1948.
(3) Explanatory Pamphlet on Payments in respect of depreciation of Land Values. (Form S.1.A.)
(4) Explanatory Pamphlet on Development Charge. (Form D.1.A.)

All these leaflets were free and could be got from the Central Land Board, the Ministry or local authorities.

Release of H.M. Forces Personnel.

Mr. G. Isaacs, replying to Mr. Hughes, said that there were no arrangements for the early release of men in the Forces to take up civilian employment and an exception could not be made in the case of men formerly employed in the building industry.

Housing Costs.

Mr. Piratin asked the Minister of Health whether he would give an estimate as to the additional cost to the building of a house arising from the increases in the price of iron and steel; and whether he would increase the subsidies to local authorities in order to meet this additional expenditure.

Mr. Bevan said that the additional cost for an average house would be trifling. On the second part of the question, Section 16 of the Housing (Financial and Miscellaneous Provisions) Act, 1946, referred.

Rent Controls.

Mr. Janner asked the Minister of Health whether he was aware that in the case of a dwelling-house which would otherwise be controlled under the Rent Acts, but in respect of which a rental less than two-thirds of the rateable value of the dwelling-house is payable, a tenant or assignee could be charged a premium of any amount by the landlord or assignor no matter how short the term of the tenancy; and whether he would introduce legislation to remedy this situation.

Mr. Blenkinsop said that the Minister was aware of the position, but was not satisfied that legislation was desirable.

Timber Prices.

Mr. De la Bere asked the President of the Board of Trade whether with a view to a reduction in the building costs of houses, he would consider reducing the trading profits he was making out of timber, and allow the price of timber to become adjusted to the world market price.

Mr. Bottomley said that the selling price of timber which was purchased on public account was fixed from time to time in relation to actual costs, and it was not the policy of the Board of Trade to make, over a period, either profit or loss on timber trading.

ECONOMY IN THE USE OF CEMENT

M.O.W. Committee's Recommendations

THE Minister of Works, some months ago, appointed a Committee composed of representatives of Government departments, local authorities, professional and trade associations, trade unions and research institutions, to examine the possibilities of effecting economies in the use of cement.

As a result of interim reports made by sub-committees of this body, two Economy Memoranda, "PI.31/5, Use of Cement in Housing and Small Scale Buildings" and "PI.31/6, Use of Cement in Engineering and Large Scale Building," have been prepared and are now available.

Copies will be sent, gratis, to builders, architects, engineers and other interested parties on application to the Ministry of Works, Room 611, Lambeth Bridge House, S.E.1. In Scotland application should be made to the Ministry's Scottish Office at 122, George-street, Edinburgh.

USE OF CEMENT IN HOUSING AND SMALL SCALE BUILDING

Economy Memorandum PI.31/5 states: This Memorandum indicates ways in which cement may be saved immediately; a further Memorandum may be published later on longer-term measures.

The Sub-Committee on Housing and Small Scale Building examined in detail the cement content of houses as indicated in the bills of quantities of 12 fairly representative local authorities in the United Kingdom and found a wide variation in the cement content of items that could be comparatively constant and to adequate standards of construction for the various classes of work.

Appendix 1 sets out recommended standards of construction for the component parts of a house.

The application of the recommendations should result in the use of not more than 6 to 7½ tons of cement (apart from prefabricated materials, *e.g.*, concrete tiles) for building a normal brick house of 1,000 sq. ft. gross. This allowance should cover *all* cement requirements, including oversite concrete or solid concrete ground floors, drains, paths, lintols, fences, etc. The higher figure should include rough-casting, although few cases require it where 11 in. hollow wall construction is adopted. This recommended range is considerably below the average of the cement actually specified in the bills of quantities examined, excluding abnormal requirements for special conditions.

It was noted from the bills that cement consumption rises steeply when rich mixes are used. This applies particularly in the case of mortar for brickwork, which accounts for more cement than any other single item in a house. The Sub-Committee endorses the Building Research Station's recommendation for gauging mortar with lime, which gives better results than cement alone and saves about 2/3rds of the cement.

It is not suggested that the growing use of clinker cement concrete blocks for the internal linings of 11-in. hollow walls to improve their insulation values should be discontinued. The figures do not, however, allow for concrete walled houses.

Many carriageways and footpaths are now being constructed of other materials than concrete. This should be encouraged.

Appreciable savings in cement could be made by applying the recommendations also to dwellings in flats and other small-scale buildings.

Appendix 2 gives information on quality control of concrete.

APPENDIX 1: RECOMMENDATIONS (SUBJECT TO BYE-LAWS)

Concrete in foundations.—1 : 3 : 6 mix, cement: sand : coarse aggregate.

Oversite concrete.—To be 4 in. thick 1 : 3 : 6 mix, cement: sand: coarse aggregate.

Concrete to solid ground floors.—As for oversite concrete.

In situ grano floors.—1 of cement: 1 sand: 1½ to 2 crushed granite passing a ¼ in. square mesh. Thickness not less than ½ in.

Concrete in steps.—1 : 2 : 5 mix, cement: sand: coarse aggregate.

Concrete fill to cavity.—Omit if sub-soil dry (i.e., chalk, gravel, etc.), otherwise fill to ground level with concrete. 1 : 10 mix, cement: aggregate.

Mortar brickwork (except piers).—(*a*) with good hydraulic lime 1 : 2 mix, hydraulic lime: sand; (*b*) with lime mortar other than hydraulic; normal exposure, cement: lime: sand: 1 : 2 : 8-9; severe exposure or work in winter, 1 : 1 : 6; inside work, 1 : 3 : 10-12.

Mortar to brick piers.—1 : 3 mix, cement: sand.

Rendering to chimney breasts.—1 : 3 : 8 mix, cement: lime: sand.

Mortar to slate D.P.C.—1 : 3 mix, cement: sand; or use a bitumen D.P.C.

Mortar to pots and vents.—1 : 1 : 6 mix, cement: lime: sand.

Mortar to clinker concrete partitions.—As for brickwork.

Clinker concrete block partitions.—Thickness not to exceed 2½ in.

Concrete hearths.—To be 4 in. thick; 1 : 2 : 4 mix, cement: sand: coarse aggregate.

Lintols.—1 : 2 : 4 mix, cement: sand: coarse aggregate.

External rendering to brickwork.—Varies with backing, exposure and type of finish. Spatter-dash coat 1 : 3 mix, cement: sand. For rough cast finish, moderate exposure, 1 : 1 : 6, cement: lime: sand.

Internal rendering to walls.—Undercoat 1 : 1 : 6 mix, cement: lime: sand. Finishing coat 1 : 2 : 9 mix, cement: lime: sand.

Concrete paths.—1 : 3 : 6 mix, cement: sand: coarse aggregate or use tarmadacam.

Concrete around fence posts.—1 : 3 : 6 mix, cement: sand: coarse aggregate 6 in. thick.

Foundations to manholes.—To be 4 in. thick on good ground, 1 : 3 : 6 mix, cement: sand: coarse aggregate.

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Mortar to brickwork in manholes.—1 : 2 : 8 mix, cement : lime : sand.

Rendering to manholes.—Omit where reasonable.

Cover slabs to manholes.—1 : 2 : 4 mix, cement : sand : coarse aggregate.

Jointing of drains.—1 : 2 mix, cement : sand.

APPENDIX 2 : QUALITY CONTROL OF CONCRETE

Improvements could be made immediately on small jobs if control were exercised. Some of these improvements are:

(1) *Grading.*—The aggregate could be more effectively controlled if the coarse aggregate was obtained in two sizes for ¾ in. maximum nominal size, and three sizes for 1½ in. maximum nominal size.

(2) *Size of Aggregate.*—The aggregate of the largest maximum size practicable should be used in all cases provided that segregation does not occur and that full compaction is achieved. Thus a mix to give medium workability with 1½ in. gravel aggregate and a water-cement ratio of .55 would require to be of proportions 1 : 6.3 by weight, whereas a similar mix with ¾ in. gravel aggregate would require to be 1 : 5.4 by weight.

(3) *Batching.*—Wherever possible materials should be batched by weight. There are many small weigh-batchers now being manufactured capable of feeding small concrete mixers of the 10/7 and 14/10 sizes. In the event of manufactured weigh-batchers not being available much could be done with improvised weighing apparatus.

Alternatively, if volume batching must be resorted to, considerable improvement in uniformity may be obtained (*a*) by making an average allowance for the bulking of the sand (this also will avoid the use of a mix richer than that specified) and (*b*) the use of deep gauge boxes of small cross section instead of shallow boxes as used now, to avoid excessive errors due to irregularities in filling to a given height.

(4) In mass concrete work plums should be used wherever possible.

(5) Cement bags should never be split, cement always being used either by the bag or by weighing the cement.

(6) The immediate application of the use of weigh-batching or aggregate volume batching and of graded aggregates can for equal concrete quality, allow the use of a somewhat leaner mix.

USE OF CEMENT IN ENGINEERING AND LARGE SCALE BUILDING

Economy Memorandum PI.31/6 states:—

Foreword.—This Memorandum indicates ways in which cement may be saved immediately ; a further Memorandum may be published later.

The Sub-Committee on Engineering and Large Scale Building had two main considerations in mind ; (1) the need to concentrate first on those items where cement saving might be realised at an early date, and, (2) the need to ensure that economies would not be recommended which might reduce the quality of the work done, or involve shortening the life of a structure.

The problems of large scale projects such as dams and bridges, which take a long time to design and build, have not yet received close attention, nor has the possibility of the use of prestressed concrete been considered.

Items on which immediate savings in cement are possible are set out in the following paragraphs.

Mortars and Renderings.—Lime-cement mixes for mortars and renderings to the latest Codes of Practice should be used. Frequently a 1 : 3 cement mortar is specified for all types of brickwork. Such a mixture often is not only unnecessarily strong for certain parts of the work, but may even be undesirable. Much cement might be saved if this practice were watched more closely. The use of cement rendering should, where possible, be avoided.

Sewers and Drains.—Careful planning of the layout of sewers and drains should lead to economy in cement use. Services should be grouped to simplify and reduce runs of drain connections, and particularly to avoid an excessive number of manholes. Manholes, too, should be of brickwork and do not require flat concrete roofs if corbelling is used.

On good hard soil the bedding of pipes could well be carried out in a lean Portland cement concrete mix, or a hydraulic lime concrete could be used. Concrete surrounds can be omitted where not required for structural stability.

Approach Roads, Footpaths, Paved Areas, Parking Places, etc.—A pitched or hard-core base, with a bituminous surface, should be substituted for concrete in all these. Suitable types of natural stone kerbs can replace precast concrete kerbs.

If a concrete road is particularly desired, its construction should be deferred until cement supply becomes easier, a temporary road surface being used for building traffic. Where soil conditions are suitable and traffic is light, some economy in cement may be achieved by the use of stabilised soil roads, surface-dressed if necessary.

Portland cement should not be used as a filler.

Foundations of Structures and Work Below Ground.—A proper investigation of the soil properties before the final design stage would often lead to important economies in foundation of structures.

Where poor soils are encountered and deep foundations are necessary, the lower layers of foundations can often consist of a lean concrete or even well graded, well compacted gravel, or other granular materials, where lateral spread is not a possible danger.

Floors.—Solid concrete slabs should be avoided for floors ; ribbed floors, hollow beam, hollow block and hollow-tiled floors, etc., should be used instead of solid concrete.

Deferment of Work.—Immediate saving of large quantities of cement would be possible if certain work were temporarily deferred, for instance, the paving of footpaths, the omission of external renderings on buildings (especially for decorative purposes) provided the durability of the buildings were not affected thereby.

Concrete Mixes.—Considerable cement economies would be made in concrete mixes for all purposes, if quality control were universally exercised.

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RESTRICTIVE PRACTICES INQUIRY

THE first six industries to be investigated by the Monopolies and Restrictive Practices Commission have been announced in Parliament by the President of the Board of Trade. They are as follows:- Electrical filament lamps, for illumination or otherwise; discharge lamps and fluorescent lamps, for illumination; instruments, appliances, equipment, apparatus, materials and accessories, wholly or mainly used in dentistry; insulated electric wires and cables; machinery for the manufacture of matches; matches; rainwater goods, soil goods and miscellaneous builders' castings, made of cast iron. In all these cases the investigation is in respect of supply in the United Kingdom, and in the case of matches in respect of exports also. The Commission will report to the President of the Board on whether conditions to which the Act applies in fact prevail, and if so in what manner and to what extent; the things which are done by the parties concerned as a result of, or for the purpose of preserving, those conditions; and whether the conditions in question or all or any of the things done as aforesaid operate or may be expected to operate against the public interest.

Any person or organisation who wishes to offer evidence on the subject matter of these references should write to the secretary of the Monopolies and Restrictive Practices Commission, 37, Upper Brook-street, W.1, for permission. It should be understood that applications to give evidence should be forwarded to the Commission only on the subject matter of the references. Any communications suggesting that other cases might be referred to the Commission should be addressed to the assistant secretary, Industries and Manufactures Department, 1, Board of Trade, Thames House (North), Millbank, S.W.1, since the Board of Trade is responsible for deciding which cases should be referred to the Commission for investigation and report.

Revised Regulations.

The Compulsory Purchase of Land Regulations, 1946, have been revised and the Compulsory Purchase of Land Regulations, 1949, which now take their place, have now been issued. Copies can be obtained from H.M.S.O., price 4d net.

NEWS IN BRIEF

An Annual Report.

The Council of the Birmingham Association of Building Trades Employers has published its report for the year ended December 31, 1948, which contains a full summary of industrial and legislative matters of concern to the building industry during the period.

Revised 1949 Priced Schedules.

"Revised 1949 Priced Schedules" has recently been compiled and published by Thos. V. Hutchins, quantity surveyor, 22, Oakley-square, N.W.1. A complete set, comprising eight schedules, is obtainable at £3 10s.

National Industrial Safety Conference.

Sir Geoffrey King, deputy secretary of the Ministry of National Insurance, will be one of the speakers at this year's National Industrial Safety Conference, to be held at Scarborough in May. He will deal with the Industrial Injuries Act in its relation to accident prevention. The conference is, as usual, being organised by the Royal Society for the Prevention of Accidents. It will last from May 13 to 15 and will be open to all interested in industrial safety, whether members of the Society or not. Sir Charles Bartlett, managing director of Vauxhall Motors, Ltd., and a vice-president of the Society, will speak on "A Managing Director's View of Industrial Safety." Other subjects to be discussed by the conference include safe practices in welding, the importance of tidiness in accident prevention, and the engineer's part in the safety movement. Full particulars can be obtained from the Industrial Safety Division of R.S.P.A., 131, Sloane-street, S.W.1.

Engineers' Appointments Bureau.

The Professional Engineers' Appointments Bureau of 13, Victoria-street, Westminster, S.W.1, announce that during 1948, the average number of engineers on the register was 559; 106 of these were primarily Civil, 252 Mechanical, and 201 Electrical Engineers. This compares with an average number of 634 engineers on the Register during 1947. It has been found that over 90 per cent. of the engineers who registered during the year were in employment, though often unsuitable, and the majority of those who were without employment were young men requiring practical training or men over the age of 45. The young engineers having engineering degrees were usually relatively simple to place, but some difficulty was experienced in finding suitable posts for those having the Engineering Cadetship Diploma. Since the Bureau commenced to operate at the end of 1945, it has found appointments for over 580 engineers and during 1948 appointment fees totalling £1,048 were received from 171 engineers. The number of offers made to registered engineers again considerably exceeded the number of acceptances, this being primarily due to the housing situation. It is reported that the advisory services of the Bureau have been utilised extensively by registered engineers and employers on a wide variety of subjects relating to employment. During the year, largely owing to the generosity of employers, donations received totalled 778, but as the registration and appointment fees charged by the Bureau are on a very low basis the total revenue was not sufficient to meet the expenses actually incurred, and it is hoped that an increased number of employers will make donations to the Bureau.

New Timber Trade President.

Mr. Norman A. Wright was, at the annual general meeting of the Timber Trade Federation of the United Kingdom, unanimously elected to succeed Major W. Newland Hillas as President. Mr. H. R. Woodburn Bamberger succeeds him as vice-president.

Slate Quarry Savings.

At the Dinorwic Slate Quarry, which is the largest in the world, 1,344 of the 1,800 employees belong to the Quarry's savings group. It is hoped to achieve 100 per cent. membership this year. The area secretary of Llanberis Savings Committee, Mr. R. G. Jones, is largely responsible for the Quarry's fine savings record.

New Industrial Plant.

Excavation work on the new foundations for the new works of the British Aluminium Co., at Falkirk, has been started by W. and J. R. Watson, Ltd., building contractors, 81, Great King-street, Edinburgh, who recently secured the £250,000 contract for its construction. Steelwork is being carried out by Redpath Brown. The factory is part of a huge general industrial expansion in the Falkirk-Grangemouth area due to take place in the near future. Anglo-Iranian and Scottish Oils are to go ahead shortly with a new oil plant at a cost of several million pounds and consideration is at present being given to the extension of docking facilities and berthing facilities at Grangemouth. If Government approval is obtained Grangemouth aerodrome—the only available site near the town—will be used as a housing estate.

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Town Planning Act Index.

An index to the Town and Country Planning (Scotland) Act, 1947, and relevant Regulations, and D.H.S. Circulars has been compiled in the County Clerk's Office, Cupar, Fife. The price is 3s. 6d.

Load Tests on Conway Bridge.

Engineers are carrying out load tests on the 123-years-old Conway Suspension bridge, scheduled for replacement. The Ministry of Transport are understood to be interested in the tests, as it is expected that the bridge will have to carry main road traffic for a long time to come, unless there is an early relaxation of restrictions of major road construction and bridge building. The object of the investigation, which is being carried out by Webster and Fitzsimons, London, consulting engineers to the Bridge Commissioners, is to determine the proportions of the bridge load borne respectively by the original iron chains, and the newer wire cables added above them as a strengthening measure more than 40 years ago.

Display Lighting Fire Precautions.

The F.O.C. Fire Protection Association, 84, Queen-street, London, E.C.4, draw attention to the fact that brighter lighting in shops and other buildings makes it necessary to ensure that the switch-gear, fuses, cut-outs, wiring and lamps, which have been out of use for so long, are all capable of doing their job when once again brought into action. All equipment of this nature is liable to suffer through disuse, and this applies particularly to any parts, whether wires or fittings, exposed to the weather. With modern display lighting high voltages are used, and overhauling is essential to ensure safety to life as well as guarding against fire. Any electrical circuits which have been out of action for a long time should not only be tested but also thoroughly examined by qualified electrical engineers before being used again. Particular attention should be paid to the fire isolating switch fitted to outside display lighting. Disuse may have corroded this switch, with the result that it may be unusable in an emergency.

BUILDING LICENSING

Information Service Circular No. 4/1949, issued by the London Master Builders' Association, recalls that under paragraphs 17 and 18 of P.I.49 (Notes for the Guidance of Applicants for Building Licences) it was permissible when the cost of licensed work was likely to be exceeded or additional work was found to be necessary through unforeseen circumstances, for an application to be made by registered post for a supplementary licence pending the issue of which work could be continued.

The Circular adds: "It should be noted that as a result of recent legal cases the Ministry have found it necessary to cancel the arrangement referred to, and the new Clause 17 makes it quite clear that in the circumstances described work outside the scope of the original licence must not be carried out until a supplementary licence has been granted."

OFFICIAL NOTIFICATION

White Lead and Titanium Oxide.

The Board of Trade announce that the control of the allocation of white lead and titanium oxide has ceased as from April 1. Ordinary trading conditions are now established, and applications for white lead and titanium oxide should be made direct to the suppliers.

TRADE NEWS

Prestressed Concrete Factory.

In connection with the article on the Prestressed Concrete factory at Iver, illustrated in our issue for March 25, we are informed that whilst the barrel vault roof was built to B.V.R. design, the roof and the whole of the concrete construction, including prestressed concrete works, were carried out by Messrs. Holland & Hannen and Cubitts, Ltd.

Non-Slip Finish to Floors.

A preparation known as "Elibrite," for imparting a non-slip finish to floors, and giving a high gloss finish, has been recently reintroduced to the market by G. Paget Ellis and Co., of 7, The Parade, Leamington, Warwickshire. It is stated to be suitable for wood, wood composition floors, table tops, bars, shop counters and desks.

"Eliglas," an alternative to bitumen-coated hessian in the waterproofing of roofs, basements, bridge decks, etc., has been introduced by Elisol, Ltd., of which G. Paget Ellis and Co. are appointed selling agents. "Eliglas" membrane is made from glass fibres, with an additional coating medium, and is claimed not to rot, shrink, warp, crack or decay.

Friction Cleaning Hinge.

A friction cleaning hinge, manufactured by Messrs. Henry Hope and Sons, Ltd., Smethwick, Birmingham, and attached to their standard windows consists of two leaves, hot-dip galvanised and electrically welded to the window. The inner leaf is curled to receive the hinge-pin, which is a loose fit in the curl. The outer leaf has two flat knuckles, which squeeze the inner leaf between them. Stainless steel washers are interposed above and below the inner leaf to reduce wear. The hinge-pin is a sherardised bolt with a nib under the head which fits in a nick in the outer hinge leaf; the bolt is fitted with the head uppermost. It is secured with a ¼-in. B.S.F. sherardised nut and lockfast washer. When the nut is tightened the two parts of the outer leaf are pinched together and bear hard on the stainless washers and the curl of the inner hinge. When the window is opened or shut there is friction between the inner and outer hinge leaves and the stainless steel washers.

New Type of Wall Tile.

Following war-time discoveries, and as a result of long research, Messrs. Soro Products, Ltd., have developed a new type of wall tile. The tiles are manufactured from a light metal alloy in the form of a shallow shell. The alloy has been specially treated to ensure complete adhesion with the fixing agent, and is said to be non-rusting and non-corrosive. The finish is an enamel surface, achieved by a special heat treatment. It can be cleaned with a damp rag or with a normal household cleaning agent. It is claimed that this renders the tiles non-conductive and will not craze or form hair-cracks, which are normally a feature of ceramic tiles, and that the surface will not flake or chip. The tiles may be cut or drilled to fit existing pipes and household fittings, and since they are made of metal, the question of breakage does not arise. Their weight is 4.22 lb. per square yard. Fixing is by means of an ordinary sand and cement mixture. The tiles are made in five sizes and five standard colours in glossy or semi-matt finish. In addition, fifty-six other pastel shades can be supplied against special orders, and decorative tiles can be made on request.

THE SCOTTISH BUILDER

NEW BUILDINGS

Bothwell.—Additions including dining accommodation, etc., to be added to the Elmwood Catholic School, for which the architect is William Watt, Albert-rd., Motherwell.

Brockburn.—Estimated to cost £250,000, a new school is to be erected, for which the architect is G. P. Booth, West Lothian County-bldgs., Linlithgow.

Glasgow.—Additions and alterations are to be carried out at 59 to 117, Helen-st., Govan, for the Abbotshaugh Engineering Co. Ltd. for which the principal contractors are Brownlee & Murray, Ltd., Posselpark, Glasgow.

Glasgow.—New Church of Scotland and halls etc., are to be erected on a Bowfield-cres. site at Penilee, for which the architects are Abercrombie & Steel Maitland, County-sq., Paisley; reconstruction with alterations and additions to be made for Richard Gibson, Royal Exchange-bldgs., at Dudley-dr , for which the architect is Wm. Alexander Wright (Stewart & Paterson), 110, Blythswood-st., Blythswood-sq., Glasgow.

Glasgow.—Plans in hand for Steel Archers, Ltd., New-bldgs., also Template Department at Anwick-st., for which the architects are Messrs. James Davidson & Son, 9, Academy-st., Coatbridge; additions and alterations are to be carried out at Copland-rd., for R. A. Peacock & Sons, Ltd., wholesale bakers, confectioners and restaurateurs, etc., for which the architects are Watson, Salmond & Gray, Central Station-bldgs., Union-st., Glasgow.

Greenock.—At Arthur-st. site, John G. Kincaid & Co., Ltd., Marine Engineers, Main-st. Works, Greenock, from plans by their own architects, are to erect a new smithy, estimated to cost between £50,000 and £60,000.

Lanarkshire.—Plans prepared for ice-cream factory at Chryston, for which the architects are Gillespie, Kidd & Coia, Wellington-chbrs., Waterloo-st., Glasgow.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

APRIL 21.

†***Surrey C.C.**—Repair of war damage and internal and external redecoration at Pelham-rd. schools. County A., County Hall, Kingston-on-Thames. Dep. £2 2s.

For
IRONMONGERY
FIREPLACES
SANITARY FITTINGS
etc.
TEUTEN
& COMPANY LTD.
153, QUEEN VICTORIA ST.
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Telephone: CENtral 2254
Established 1869

APRIL 22.

†***Coventry T.C.**—12 temporary shops at Jordan Well. D. E. E. Gibson, City A., 1a, Warwick-row. Dep. £2 2s. Tenders by May 9.

APRIL 23.

†***Wenlock T.C.**—10 houses with external services at Site "A," Beech-rd. housing estate, Iron Bridge, Shropshire. Walter B. Bond, Colmore-chbrs., Newhall-st., Birmingham. Dep. £2 2s.

APRIL 25.

***Congleton T.C.**—32 houses at Parson-st. site, contract No. 1. B.E., Town Hall. Dep. £2 2s.

APRIL 29.

***Beckenham T.C.**—Repair of war damage and dilapidations, etc. B.E. & S., Town Hall. Dep. £2.

†***Carshalton U.D.C.**—72 flats at Denmark-rd., together with site preparation works, etc. J. W. Wright, C., District Council Offices, The Grove.

North Riding E.C.—Junior and Infants' School at Barrowcliffe, Scarborough. Secretary, Education Offices, County Hall, Northallerton.

APRIL 30.

†***Wenlock T.C.**—Six houses at New-rd., Broseley. Walter B. Bond, F.R.I.C.S., Colmore-chbrs., 3, Newhall-st., Birmingham, 3. Dep. £2 2s.

***Wycombe R.D.C.**—14 bungalows at Princes Risborough (New-rd.) estate. J. M. Smith (F.), architect, 100, Easton-st., High Wycombe, Bucks. Dep. £3 3s.

MAY 2.

***Monmouthshire C.C.**—Erection of buildings, in traditional construction, foundations for prefabricated buildings, ground works and drainage for Infants' School at Wyesham. Colin L. Jones (F.), County A., Queen's Hill, Newport, Mon. Dep. £3 3s.

***Runcorn U.D.C.**—Public conveniences at Bridge-st. E. & S., Town Hall. Dep. £2 2s.

***Stockton-on-Tees T.C.**—104 houses at "Roseworth" estate. Boro' A., 28, The Square. Dep. £2 2s.

MAY 3.

†***Leeds Regional Hospital Board.**—Eight staff cottages at Meanwood Park Colony. Architect to the Board, 29-31, Eastgate, Leeds 2. Dep. £2 2s. Tenders by May 17.

†***West Sussex C.C.**—(1) New two-form entry Junior Boys' School at Southwick; (2) new four-class Infants' School (stage 1) at Wick, Littlehampton. F. E. Steele (F.), County A., County Hall, Chichester.

MAY 5.

***Ilford T.C.**—Public convenience at Wangye-rd. B.E. Dep. £2 2s.

MAY 9.

***Blackwell R.D.C.**—38 houses and 10 bungalows off Doe Hill-la., Tibshelf, Derbys. Architect & Housing Supt., "Dale Close," 100, Chesterfield-rd. South, Mansfield, Notts. Dep. £2 2s.

***Gainsborough U.D.C.**—50 houses at White's Wood-la. site. S. Algar, F.R.I.C.S., E. & S., Council Offices, Lord-st. Dep. £3 3s.

MAY 14.

***Morley T.C.**—12 houses at Vicarage-av. estate, Gildersome. M. H. Brook (A.), Housing Director, National Provincial Bank-chbrs., Queen-st. Dep. £2 2s.

MAY 16.

***St. Austell U.D.C.**—Five houses at Pentillie, Mevagissey. E. & S., Municipal Offices. Dep. £2 2s.

***States of Guernsey.**—18 houses at Baubigny, St. Sampson's. G. Heggs, States E., States Office. Dep. £1.

NO DATE.

***Brighouse T.C.**—38 houses at Stoney-la., in three contracts; 20 houses at Cain-la., in two contracts. B.E. & S., Commercial-st.

***Wing R.D.C.**—24 houses with roads and sewers at Pitstone. H. A. Rolls (L.), 15, Bridge-st., Leighton Buzzard. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

MAY 4.

***Southend-on-Sea C.B.**—Heating installations at New Dope Shop, Municipal Airport. B.E., Municipal-bldgs. (Annexe). Dep. £2.

MAY 16.

***Southport C.B.**—Heating, hot and cold water services, gas services and ventilation at Churchtown Secondary Modern School, Marshside-rd. H. D. Dodd (F.), Boro' Schools' Architect, Town Hall.

GENERAL BUILDING WORK

(LONDON)

Battersea.—HOUSING.—L.C.C. Housing Comm. has approved tentative scheme prepared by Collcutt and Hamp, FF.R.I.B.A., 126, Wigmore-st., W.1, for the development of the Usk-rd. site by the erection of 71 flats. (Est. cost, £135,300.)

City of London.—HALL.—Mr. Ian McLaren, F.R.I.B.A., 6, The Broadway, Wimbledon, S.W.19, is the architect for the rebuilding of the Royal Scottish Corporation Hall, Fetter-la. Building licence for £12,500 granted. Tenders shortly.

Dagenham.—JAPANNING SHOP AND EXTENSION.—Messrs. Springcot, Ltd., propose japanning shop and extension to assembly shop at premises at Whalebone-la., South.

Dagenham. — EXTENSION. — Wagon Repairs, Ltd., propose extension of office and lavatory accommodation, Dagenham Dock.

Dagenham. — LICENSED PREMISES. — Messrs. Taylor, Walker & Co., Ltd., Limehouse, E.14, propose public-house at junction of Whalebone-la. South and Stanley-ave.

Dagenham. — EXTENSION. — Essex County Nursing Association, Beachcroft-rd., E.11, propose additions to York House, Frizlands-la.

Dagenham.—HOUSING.—Layout and house plans for 26 dwellings on the Blackborne estate have been submitted to the M.O.H.

Dagenham.—FLATS.—B.C. propose three-storey, two-bedroom type flats on the Eastbrook estate.

Dagenham.—HOUSING.—B.C. Housing Committee have agreed in principle to allocate to Dagenham War Memorial Trustees a site (approx. ½ acre) on the Marks Gate estate for houses for disabled persons.

Dagenham.—FLATS.—Essex C.C. have consented to use of land by B.C. for erection of flats at (a) High-rd./Woodlands-ave., and (b) Whalebone-la. South (Stanley-ave./Gray-ave.).

Dagenham. — SHOWROOMS, ETC. — Time Engineers, Ltd., propose showroom, office and workshop on site between 596 and 622, Rainham-rd. South.

(PROVINCIAL)

Accrington.—T.C. to submit scheme for crematorium to M.H. for approval.

Ashton-under-Lyne.—T.C. approved additions to factory at Hurst, Stamford Commercial, Ltd. Additions, "Reporter" offices, Warrington-st., for J. Andrews & Co., Ltd. Alterations, Claremont-arcade, Greenwoods, Ltd.

Billingham-on-Tees.—Major S. W. Milburn, 9, The Esplanade, Sunderland, to prepare development scheme for shopping and civic centre.

Bramhall.—Ches E.C. propose primary school at Nevill-rd.

Brighouse.—T.C. approved: Alterations, 13, Commercial-st., H. & O. Greenwood, Ltd. Layout for 200 houses at Rastrick housing site.

Bury.—T.C. approved: Garage, Willow-st., for Corporation. Commercial garage, Millett-st., Cliff Holden (Motors), Ltd. Kaysam Syndicate, Ltd., propose alterations to works at Derby-st. T.C. received allocation from M.H. of 239 houses and 53 by private enterprise. T.C. propose primary school at Fairfield.

Chesterfield.—Wilcockson & Cutts, 12, Saltergate, are architects for Devonshire Arms Hotel, at Boythorpe-rd., for Tennant Bros., Ltd., Exchange Brewery, Sheffield.

Clitheroe.—Lancs C.C. propose dining-hall and kitchen at Grammar School.

Coventry.—E.C. propose rebuilding John Gulson School at Leicester-causeway. F. Barnard Reyner (A.), 15, Queen's-rd.

Dewsbury.—Dewsbury Pioneer Industrial Society, Ltd., Northgate, propose bakery. Plans by Firth, Son & Blackburn (A.), Broadway House.

Doncaster.—T.C. propose 94 houses at various estates.

Eston.—North Riding E.C. propose primary school north of Coast-rd., Eston.

Flintshire.—E.C. propose county colleges at Flint, Rhyl, Dee Side and Mold, at £80,000 each.

Fulwood.—Lancs E.C. propose sec. school, at £180,020. Plans by G. Noel Hill (F.), County A., County Offices, Fishergate-hill, Preston.

Gateshead.—Corporation Welfare Services Committee approved in principle plan for renovation of four blocks at former Poor Law Institution at High Teams, at £60,000.

Golborne.—U.D.C. approved: Police houses at Warrington-rd., Culcheth, for Lancs C.C.; additions, Brookside Mills, for H. S. Whiteside (Sun Pat), Ltd.

Heywood.—T.C. approved alterations and additions at Pack Horse Hotel, Birtle, for J. W. Lees & Co. (Brewers), Ltd., Greengate Brewery, Middleton Junction. Butterworth & Duncan, architects, 2a, Baillie-st., Rochdale.

"THE BUILDER" PRICES

The following revised materials prices are announced:—

	per ton
Dry White Lead, in 8-cwt. casks ...	£131
Ground White Lead (for lots of 5 cwt. and under 2 tons) in 5 cwt. casks	£151 10s.
White Lead Paint, ready mixed (for lots of 20-gals. and under 160 gals.) in 1-gal tins	*per gal.* 45s. 6d.
	per ton
Genuine Dry Red Lead	£121 10s.
" Dry Litharge	£121 10s.
" Dry Orange Lead ...	£133 10s.
" Red Lead ground in oil...	£145 10s.
" Orange Lead ground in oil	£157 10s.

Brass Tubes: *Home*, 23½d. *Export*, 23¼d. per lb.

The revised prices (London Area) for 417 cement are as follows:—1-9 cwt.,6s. 2d. per cwt.; 10-19 cwt., 87s. per ton; 1 ton-5 ton 19 cwt., 83s. per ton; 6 tons and above, 82s. per ton. Bags are charged at 9s. per ton or at 6d. each in lots of under 1 ton.

Huddersfield.—Corporation to receive further allocation of 220 houses.

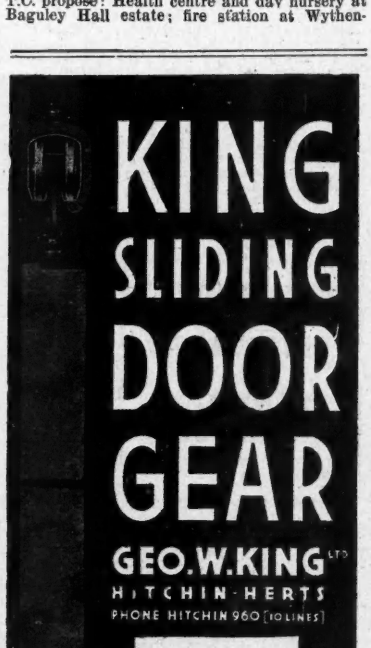
Hyde.—Additions at No. 2 works, Manchester-rd., for C. A. Harnden, Ltd.; extensions at offices and new lavatories, at works, Pine-st., for T. & E. Warrington (Hyde), Ltd. T.C. propose aged men's home, at £8,000.

Keighley.—E.C. propose central cooking depot for school meals at Wesley-pl.

Llandudno.—Staffs C.C. propose adaptations at Old Abbey Hotel, Marine-dr., for conversion to Children's holiday home, at £11,000.

Manchester.—T.C. approved:—Offices at 2a, Dewhurst-st., Strangeways, for Barclays Bank, Ltd., 3, York-st.; extensions to works, Canal-st. and Kirby-st., Ancoats, for J. Weideman, 6, Kirby-st.; 23 garages at Oswald-rd. and Wilbraham-rd., Chorlton-cum-Hardy, for Hollins Trust, Ltd., 64a, Bridge-st.; extensions to factory at Clifford-st. for Harrison Knitting Co., Ltd., Upper Brook-st.; extensions to rubber works at Culcheth-la. and Stansfield-st., Newton Heath, for P. Frankenstein & Sons, Ltd.; rebuilding 7, St. John-st., Deansgate, for Ellis Markendale, Ltd. (T. Beesley, architect, 912, Kingsway, East Didsbury); office to works at Ten Acres-la. and Briscoe-la., Newton Heath, for Mather & Platt, Ltd., Park Works; extensions to factory at Broadgreen-la., Gorton, for Pioneer Ventilating and Drying Co., Ltd.

Manchester.—E.C. to seek sanction to borrow £58,752 for primary school at Heaton Park; T.C. propose: Health centre and day nursery at Baguley Hall estate; fire station at Wythenshawe; primary school with nursery section, at Firbank-rd., Newall Green, Wythenshawe; houses for staff at Langho Colony, Whalley.



Manchester.—T.C. approved: Reinstatement of warehouse at Julia-st., Strangeways, for J. Wansker, T. A. Fitton & Son (A.), 7, Chapel-walks; garage to works at St. Vincents-st., Ancoats, J. A. McKay, Ltd., Matley, Brotherton & Mills, architects, 39, Oxford-rd., Chorlton-on-Medlock; workshop, Great Ancoats-st., J. R. Evans (Manchester), Ltd., Wheeler, Wood & Hobson, architects, 26, King-st. Synagogue, Middleton-rd., Higher Crumpsall, Executive of Heaton Park Hebrew Congregation, P. Cummings (F.), 16, Oxford-st.; G. B. Mathers, 128, Wilmslow-rd., Fallowfield, propose 60 service flats at Wilmslow-rd., Rusholme, A. J. Seal & Partners (F.), Majestic-chbrs., Westover-rd., Bournemouth, Hants. E.C. propose four additional classrooms and dining-room and kitchen at Royal Oak School, Wythenshawe, at £36,000.

Mansfield.—T.C. approved:—Service garage at Windsor-rd. for E. Timmons; hotel at Littleworth for Mansfield Brewery Co., Ltd.; extensions to factory at Corporation-st. for R. L. James & Co., Ltd.—T.C. propose shopping centre at junction of Bancroft-la. and Oakdale-rd.

Matlock.—U.D.C. approved layout of building land at Derby-rd., Cromford; bungalows at Slayley for G. R. Cooper.—U.D.C. propose central bus station at Bateman's Park.

Matlock.—Governors of Ernest Bailey Grammar School propose three additional classrooms.

Mold.—Flintshire C.C. propose technical college at Kelsterton at £300,000. Also junior and infants' mixed school at Mostyn.

Newcastle.—G. Towers & Co. propose bottling factory. Plans by C. S. Errington, 46, Grainger-st., Newcastle.

Newcastle.—Additional floor to be built at works of G. Angus and Co., Ltd., Walker-rd., Newcastle. Architects, S. W. Milburn & Partners, 9, The Esplanade, Sunderland.

Newcastle-on-Tyne.—Alterations to provide for department of geography for King's College are to be carried out at Nos. 1 and 2, Sydenham-ter., to plans by W. H. Williamson, of King's College. C. Solomon, 3, St. Mary's-pl., Newcastle, is architect for alterations to provide upholstery factory at Horatio-st. and Tyne-st., for Spicka, Ltd. Plans been prepared by Arthur & Kirkup, 13, Swinburne-st., Gateshead, for office alterations at Jesmond-rd., for R. Ranken & Sons, Ltd., Ouse-st., Newcastle. J. Baxter & Co. propose warehouse at Pandon and Wall Knoll (architect, C. Solomon, 3, St. Mary's-pl., Newcastle). Town Improvement and Streets Committee approved revised plans by Hetherington & Wilson, County-chbrs., 52, Westgate-rd., Newcastle, for proposed hotel at Purley-gdns., for Vaux & Associated Breweries, Ltd., The Brewery, Sunderland. J. W. Taylor & Son, St. James's-bldgs., Gallowgate, Newcastle, prepared plans for office and garage alterations at Gallowgate and Strawberry-pl., for Auto Garages (Northern), Ltd.

Newcastle-on-Tyne. — E.C. propose conversion work at Jesmond Dene House, at £30,000. Plans by G. Kenyon, City Ed. offices, Northumberland-rd., Newcastle.

Newcastle, Staffs.—T.C. approved: Additions to works at Hanover-st., for Hanover Tile & Fireplace Co., Ltd.; extensions at 53, Sneyd-av., for Ind Coop & Allsopp, Ltd., Station-st., Burton-on-Trent. J. A. Dorin (A.), Tontine-chbrs., Tontine-st., Hanley, Stoke-on-Trent. T. Hessan & Co., Ltd., propose pottery factory at Chester-Knutton-rd. M.O.W. propose automatic telephone repeater stn., at Cross Heath, for P.M.G. R.C. Authorities propose Church at London-rd. and The Hollows, Chesterton. T.C. propose 97 houses and maisonettes at Clayton estate, also maisonettes at Thistleberry-av.

Northampton.—T.C. approved:—Two factories at Weedon-rd. Industrial Estate for T. Wilson & Son, Ltd., 67, Sheep-st.; factory at Doddridge-st. for Bassett-Lowke, Ltd., 13, St. Andrew-st.

Northampton.—Mettey Co., Ltd., 16, Harleston-rd. propose extensions to works at Harleston-rd. S. J. Mortimer, 5, St. George's-st., propose extensions to factory at St. George's-st.

North Riding.—C.C. proposed police training school at Northallerton. Plans by County A., County Hall, Northallerton.

North Riding.—C.C. considering scheme for acquiring Welburn Hall, Kirbymoorside, for conversion into a residential school for physically handicapped children at £46,500.

North Shields.—William Stockdale, 73, Howard-st., North Shields, is architect for office alterations at Nile-st. for Northern Press, Ltd.

North Shields.—E. M. Lawson, Barras-bldgs., Barras Bridge, Newcastle-on-Tyne, is architect for ice cream factory and 5 lock-up garages at Back Prudhoe-st. for S. C. Millar, Blyth-rd., Whitley Bay.

Northumberland. — County Aged Miners' Homes Association planning further homes at Dinnington, Seghill and Backworth.

Northumberland.—C.E.C. propose hostel at Hexham. Plans by County A., W. W. Tasker, County Hall, Newcastle.

Northumberland.—E.C. propose kitchen and dining-room at Wylam County Primary School, to plans by County A., County Hall, Newcastle-on-Tyne.

Oldham.—T.C. approved:—Additions at Queen's hotel, 564, Manchester-rd., for Yates' Castle Brewery Co., Ltd., Ardwick Brewery, Manchester 12; rebuilding repertory theatre, Fairbottom-st., for Oldham Repertory Theatre Club, Ltd. D. Lasdun (A.), 25, Dawson-pl., Paddington, W.2.

Oldham.—E.C. propose school at Hathershaw and technical college at Rochdale-rd. and Middleton-rd.

Oldham.—T.C. approved: Extensions to factory and brick garage at Havelock-st., for Cobden Chadwick, Ltd.; additions, Maple Mill, Cardwell-st., for Maple Mill, Ltd.; extensions to works at Bankcroft-st., for W. Bottomley. T.C. propose: Community centres on housing estates; school canteen at Hadfield-st., Hathershaw.

Portmadoc.—Terrazate Building Products, Ltd., propose factory at Tremadoc.

Poulton-le-Fylde.—R. Fielding & Son, Stanhope-rd. Works, Blackpool, propose 52 houses at Belgrave Pk. estate. Plans by Fairbrother, Hall & Hedges (A.), Bank-chbrs., Market-pl.

Rochdale.—T.C. approved:—Engineering works at Michael-st. for G. A. Graydon, 148, Milkstone-rd.; extensions at Roach Vale Mills, Spring Mill-walk, for Rochdale Wallpaper Printing Co., Ltd. Heywood & Ogden, architects, 1, St. Peter's-st., Oldham.

Rothbury.—R.D.C. to erect 16 Airey houses. Architects, W. R. Dixon & Son, 1, Collingwood-st., Newcastle.

Sale.—Ches. C.C. propose primary schools at Sale and Timperley.

Seaton.—U.D.C. propose a communal washhouse at Shiremoor, and 33 houses at Seghill. Plans by J. E. Burgess, S., Council Offices, Seaton Delaval, Northumberland.

Sheffield.—Southern & Richardson, Ltd., Milton-st., propose factory at Doncaster-st., Ellis-st. and Shepherd-st.

Shipley.—U.D.C. approved reconstruction of dye house at Spring Dye Works, Norwood-ave., for Fearnleys (Dyers), Ltd.; extensions to coach works, Wharncliffe-rd., for Olivers (Shipley), Ltd., Hird-st.

South Shields.—Plans to be prepared by B.E. (Lieut.-Col. John Reid) for erection of shops at Boldon-la. area. South Shields Trustees Savings Bank propose prefabricated bank premises in same area. Streamline Taxis, Ltd., South Shields, planning a garage in Mile End-rd. J. Cowie & Co., Ltd., Ferry-st., South Shields, to erect warehouse and garage at Portberry-st. and Commercial-rd. Sunderland & South Shields Water Co., Ltd., 29, John-st., Sunderland, to build three-storey building at Bronghton-st.

Startforth.—R.D.C. to erect ten houses at Mickleton and ten at Cotherstone. Plans by H. B. Richardson, Darlington.

Stretford.—T.C. approved: Layout for 12 police houses, Larch-st., Lancs C.C.; additions to works at Christie-rd., Graigielea Joinery Works, Ltd.

Sunderland.—T. W. Greenwell & Co., Ltd., received Admiralty approval of scheme for new dry dock.

Tarvin.—R.D.C. propose houses on sites at Quarry Hill, Faradon, Old Hall-st., Malpas.—Received M.H. approval for houses at Keysbrook, Tattenhall, Tilston, Huxley and Edgecroft.

Thornaby-on-Tees.—S. Eddy, haulage contractor, 55, Westbury-st., Thornaby, proposes commercial garage at Queen-st. West.

Urmston.—U.D.C. approved residential hotel at Moss Vale, Lostock-rd. and Canterbury, Davyhulme, for Walker & Homfrays, Ltd., brewers, Woodside Brewery, Eccles New-rd., Salford 5.

Wallasey.—George Wilkie & Co. (Wallasey), Ltd., Promenade, New Brighton, propose ice-skating rink and sports stadium on Marine-parade, New Brighton.

Warrington.—T.C. approved alterations to offices at Fennel-st. for J. H. Fleming & Co., Ltd.; canteen, shower baths, locker room to works at Foundry-st. for James Smethurst & Son; extensions to workshops, Liverpool-rd., for P.L.P. Motors, Ltd.

Warrington.—T.C. approved: Additions to works and offices at Dallam-la., for Whyman's Foundry Co., Ltd.; alterations to offices at Orford-st., for Armitage & Rigby, Ltd.

West Hartlepool.—T.C. proposes acquiring "Parkhill," The Parade, for conversion into old people's hostel at £8,500.

West Hartlepool.—T.C. propose to reconstruct sea bath at Seaton Carew, at £15,000. Plans by Boro' A., S. J. Richmond, Town Hall.

Wharfedale.—R.D.C. approved: Flats at Creskeld-la., for D. M. Fletcher; works at Black Hill-rd., Arthington, for Aberford Quarries, Ltd.

Wigan.—Rev. W. H. Dixon and members of Methodist Church propose church at junction of Buckley-st. and Barnsley-st. at £10,200. J. C. Prestwich & Sons (F/A.), Bradshawgate-chbrs., Leigh, architects.

TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government Departments*.

Ashby Woulds.—56 houses at Norris Hill No. 2 site for U.D.C. *Spooners (Hull), Ltd., £68,191.

Ashton-under-Lyne.—20 houses at Fountain-st. site, for T.C. A. T. Kemp, M.I.Mun.E., B.S., Municipal-bldgs., Warrington-st.: *W. Plant & Hill Bros., Queen's-rd., Hurst, Ashton-under-Lyne, £26,991 (in lieu of tender previously accepted).

Barton-on-Humber.—16 houses at Tofts-rd. site, for U.D.C. G. S. Else, S.: *Stamp & Son, Ltd., Brigg-rd., Barton-on-Humber, Lincs, £19,513.

Bedford.—28 houses at Harrowden-rd., for T.C.: *Warton & Goodship, 8, Union-st., Bedford (6); *F. J. Berrington, 4, Kennedy-rd., Bedford (4); *Besbuilt, Ltd., 3-5, Harpier-st., Bedford (4); *Haywin, Ltd., Oakley House estate, Bedford (4): *Winton Hayes, Ltd., Drove-rd., Biggleswade (4); *Gambriel & Lugars, Dane-la., Wilstead (4); *F. Ashwell, 60, Spring-rd., Kempston (2) (all subject to M.H. approval).

Bishops Stortford.—62 Unity houses for T.C. *Clayden (Contractors), Ltd., and *Leyford, Ltd., Bishops Stortford.

Bridgwater.—50 houses at Hamp estate for T.C. R. A. Watson, B.E., Town Hall. *Roberts Bros. (Contractors), Ltd., Taunton-rd., Bridgwater, Somerset, £64,373.

Cramlington.—Alterations at Travellers' Rest Hotel, for McEwan & Co., Ltd. Architects, Page, Son & Hill, 75, King-st, South Shields: *Hastie D. Burton, Ltd., King-st., North Shields.

Dagenham.—20 houses at Marks Gate estate, section 2, for T.C.: *Ager & Baker, Ltd., £25,187.

Denton.—20 houses at Lee Farm estate, for U.D.C. D. S. Graham, S., Town Hall: *Egerton Construction Co., Ltd., St. Lawrence-rd., Denton, nr. Manchester.

Hampstead.—Conversion of No. 11, Netherhall-gdns., into 10 flats. Richardson & McLaughlin, architects, 14, Sackville-st., W.1. *Linzells, Ltd., 40, Chiswick Common-rd., W.4.

Hendon.—30 houses at Fairmead-cres., for B.C.: *Matthew James & Co., Ltd., £40,658.

Hoole.—38 houses at Linden-gr. estate, for U.D.C. Robert Boot, architect, 22, Newgate-st., Chester: *Thomas Warrington & Sons, Ltd., 84, Station-rd., Ellesmere Port, Ches, £45,317.

Huddersfield.—Alterations and additions at Rashcliffe, for Taylor & Lodge, Ltd. Stocks, Syke & Hickson (F.), 4, St. Peter's-st.: *William Mallinson & Sons, Albert-st., Lockwood, Huddersfield (estimated cost, £13,000).

Huddersfield.—Alterations at 3-5, Buxton-rd. for conversion into offices, for T.C. H. Nuttall (A.), Boro' A., High-st.-bldgs.: *Harold May (Builders), Ltd., Chapel-hill, Huddersfield.

Hull.—58 houses, for T.C. A. Rankine (A.), City A., Guildhall: *Myton, Ltd., Clough-rd., Hull, £72,706.

Hyde.—56 houses and 30 flats at Harbour Farm estate, for T.C. T. Cooper, A.M.Inst.C.E., Municipal-bldgs.: *Alfred Green (Moston), Ltd., Grosvenor-st. Works, Moston, Manchester, £125,100.

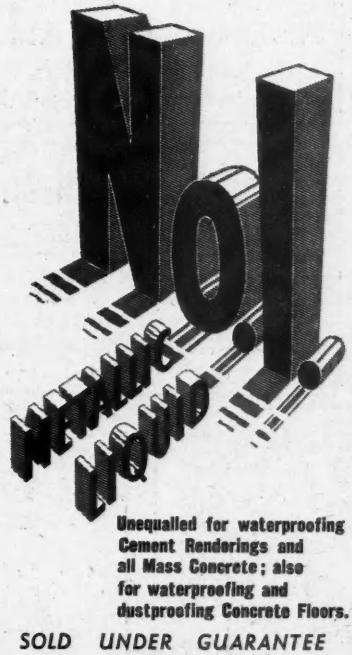
Jarrow.—Branch stores at Simonside estate, for Jarrow and Hebburn Co.-op. Society, Albert-rd., Jarrow. Architects, C.W.S. Architects' Dept., 90, Westmorland-rd., Newcastle-on-Tyne: *C.W.S. Building Dept., West Blandford-st., Newcastle-on-Tyne. (Building licence granted.)

Liverpool.—Completion of factory at Kirkby estate, for Imperial Chemical Industries, Ltd., Ship Canal House, King-st., Manchester 2: *George Wimpey and Co., Ltd., Tilehouse-la., Denham, Uxbridge, Middlesex.

Liverpool.—School buildings at Montague-rd., Old Swan, for Rev. N. Coghland, P.P., St. Oswald's, St. Oswald's-st.: *James Tomkinson & Co., Ltd., 22, Roscommon-st., Liverpool.

L.C.C.—Contracts exceeding £2,500 in value placed by L.C.C. during period ended April 7:—Reinstatement after war damage of Barrett-st. technical college: A. N. Coles (Contractors), Ltd., W.2: *complete exterior painting and interior decorative renovation at Ruby-st., Camberwell; Andrew Black & Son, Catford; complete exterior painting and interior decorative renovation at Droop-st. school, Paddington: Davis Contractors, Ltd., Kilburn; interior decorative renovations at Old Oak school, Hammersmith: George Jones & Son (Contractors), Ltd., Kensington; complete exterior painting and interior renovation at Woodmansterne-rd. school, Streatham: Howe & White, Ltd., Wallington; complete exterior painting and interior decorative renovation at Children's House nursery school, Bow: J. & J. Dean, Ltd., Leyton; complete exterior painting and interior decorative renovation at Putney school of art: B. R. Palmer & Co., S.W.19: electrical installation at Chapman-st. school, E.1: W. H. Gaze & Sons, Ltd., Kingston-on-Thames; adaptation of Manor House, 58, Clapham Common, North Side, for the purposes of Battersea training college of domestic science: Sloggetts (Contractors), Ltd., Kensington; construction of block of 25 dwellings, children's fitted playground and 58 perambulator sheds at Ocean estate, Stepney: W. H. Gaze & Sons, Ltd., W.1.

¶London (M.o.W.).—Contracts placed by M.o.W. during week ended April 2.—*London:* St. Katherine's C/E. School, College Park-rd., White Hart-la., Tottenham, Temporary school buildings, Parsons Bros. & Jennings, Ltd., 314, High-rd., Tottenham, N.15. Houses of Parliament, Repair to Law Lords' Corridor, Higgs & Hill, Ltd., South Lambeth-rd., S.W.8. Kidbrooke, D.M.L.F. Depot, temporary lavatory accommodation, Grant & Partners, Ltd., 1, Manor Park-parade, Lee High-rd., S.E.13. *Aberdeenshire:* Coastguard Station, Bridge-of-Don, Coastguard station, J. Aitken, 229, Great Northern-rd., Woodside, Aberdeen. *Dorsetshire:* Ferndown School, Hampreston, Kitchen and dining-room, Whitelock & Co., Ltd., Branksome, Bournemouth West, Hants. *Co. Durham:* Witton Park School, Bishop Auckland, School meals accommodation, Isaac Berriman, Woodlands Joinery Works, Fencehouses. Cornforth-la. County School, Co. Durham, School meals accommodation and additional classrooms, Isaac Berriman, Woodlands Joinery Works, Fencehouses. Fatfield County School, School meals accommodation and additional classrooms, Randle & Co., Ltd., Cedric Joinery Works, Sunderland. *Essex:* Manningtree, Telephone Repeater Station, Hutton (Builders), Ltd., Birch, Colchester. *Herefordshire:* Voluntary Agricultural Camp, Moreton-on-Lugg, Alterations and additions, William T. Nicholls, Ltd., St. Paul's-road, Gloucester. *Herts:* B.R.S. Water Pollution Res. Depot, Garston, Watford, Two standard huts, Payne Bros. (Leavesden), Ltd., Watford. *Kent:* Drapers Mill County School, Margate, Kitchen and dining-room, Operative Builders and Decorators, Ltd., Park-la., Birchington. *Northumberland:* Monkseaton C.M. School, Kitchen and dining-room, Ralph Bowey & Son,



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¶**London (War Dept.).**—Works contracts placed by War Dept. for week ended April 2.—*Glasgow:* Building work, James Laidlaw & Sons, Ltd., Glasgow. *Staffs:* Building work, M. A. Boswell (Contractors), Ltd., Wolverhampton. *Glamorgan:* Building work, Vickery Bros. (Barry), Ltd., Barry, Glam. *Ches:* Building work, F. Thomas & Co., Chester. *Anglesey:* Building work, R. A. Buckle, Ltd., Prestatyn. *Cumberland:* Painting work, Reid Bros., Carlisle. *Merioneth:* Miscellaneous work, J. C. Vaughan & Son, Hereford.

***Lydd.**—32 houses for T.C. Culpin & Son, 3, Southampton-pl., W.C.1, architects. Quantities by Dearle & Henderson, 123, Victoria-st., S.W.1. *J. B. Rose & Co., Ltd., 157, Sandgate-rd., Folkestone, £39,955.

Middlesbrough.—Houses, for T.C. J. A. Kenyon, B.E.: *S. & E. Lowe, Ltd., *G. Wilmhurst, *Sweeting & Partner (12 houses each); *J. C. Mitchell (10); *H. Halliman (4). (All local firms.)

Newcastle-on-Tyne.—Additional floor at Orchard-st., for Norbrit, Ltd.: *T. W. Hadden, 107, New Bridge-st., Newcastle-on-Tyne.

Newcastle (Staffs).—Works, for T.C. J. W. Tonge, B.Sc., A.M.Inst.C.E., B.S., Municipal Offices. 19 houses at Stafford-cres., Clayton estate, and Bradwell-la., Bradwell estate: (5) *R. Nabney, Earl-st., £6,375; (6) *W. Harrop, £7,258; (8) *A. Jones, London-rd., Chesterton, £9,451 (rest of Newcastle, Staffs).

Ringwood and Fordingbridge.—Three blocks of bungalows at Fordingbridge for R.D.C. *Hawkins Bros., Contractors, Bournemouth, £8,628.

Ripon and Pateley.—24 Airey houses at Markington for R.D.C. *Chester and McLauchlan, Knottingley, £30,961.

Rishton.—40 houses at Sands estate, for U.D.C. H. Cott, S.: *Holland & Hannen and Cubitts, Ltd., Queen Anne's-gate, London, S.W.1, £51,082.

Runcorn.—44 houses at Russell-rd. estate, for U.D.C. A. B. Cunningham, M.I.Mun.E., E. & S., Town Hall. Quantities by W. G. Wood, A.I.A.S.: *W. R. Salisbury & R. Peel, Ltd., 80, Mostyn-st., Llandudno, £60,731. (Subject to M.H. approval.)

Sheffield.—Works, for T.C. W. George Davies (F.), City A.. 69 flats at Edward-st., scheme No. 2: *Public Works Dept., 73, Surrey-st.; 190 houses at Richmond estate: *Public Works Dept., £244,857.

Stalybridge.—20 houses and flats at Oakwood estate, for T.C. Howard & Benson (A./A.), 88, Mosley-st., Manchester 2: *James Ridyard & Sons, Ltd., Railway Saw Mills, Ashton-under-Lyne, £21,345.

Stourbridge.—140 houses and 20 bungalows at Norton estate, for T.C.: *Joseph Webb, Ivy House-la., Coseley, £31,728 (24); *Nathan Hyde, Claremont-rd., Sedgley, £163,101 (136). (Both subject to M.H. approval.)

Tavistock.—6 houses at Mary Tavy, for T.C.: *L. F. Burley & Sons, Mary Tavy, £9,328.

Tipton.—26 houses for T.C. B.S., Municipal-bldgs.: *Nathan Hyde, 6, Claremont-rd., Sedgley, £30,160 subject to M.H. sanction).

Wallsend.—Erection of (a) 50 houses, and (b) 48 houses at Willington West Farm estate, for T.C. G. N. Teasdale, B.E.: (a)* R. Summerbell & Sons, Tyne Dock, South Shields, £60,580; (b) *J. E. Gardner, Ltd., Cuthbert's-rd., Gateshead, £58,185.

Wolverhampton.—Bushbury North secondary school (first section), for T.C. W. M. Law, M.B.E., A.M.Inst.C.E., B.E., Town Hall: *William Whittingham, Ltd., Pawlett-st., Wolverhampton, £127,919.

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